Deliverable T1.3.1 «Demand and Supply analysis of current situation in ADRION»

FINAL REPORT

16/12/2019

Inter-Connect project Doc. TYPE/No/Title	T1.3.1/ Demand and Supply analysis of current situation in ADRION
WP	WPT1: Setting the scene for intermodality enhancement and rail reform in ADRION
Date/Version	Update of the 18/04/2019* * Incorporating further / updated input for the case of Igoumenitsa
Authors	CERTH/HIT
Contribution	All

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1. Introduction

1.1 Work package 1; "Setting the scene for intermodality enhancement and rail reform in ADRION"

The first technical WP of Inter-Connect project, consisting of 3 activities, aims to capitalize on the existing knowledge in passengers' intermodal transportation and rail use deriving from policy documents and strategies (regional/national/transnational) search as well as from international real cases experience (best practices) review. WPT1 continuous with the formulation of ADRION's transnational connectivity map; starting from an in depth analysis of transnational transport flows (demand) and of supply and continuing with users' needs and expectations analysis along with experts opinion capturing procedures, future scenarios for ADRION's connectivity are developed (2020,2030 time horizons). Existing investments and plans for ADRION's interconnection will be taken into account during the scenarios formulation phase in order to maximize projects effects and mainstream activities into transnational policies. RDA LUR (SL), having to present a considerable experience coming from its participation in a number of projects dealing with sustainable transport interventions ranging from the macro perspective of TEN-T corridors to regional/local projects, leads WPT1 which has as a final output the development of a strong network structure; Inter-Connect's Cooperation Platform, an extended list of stakeholders at all three levels in transportation examination (local/regional, national, transnational) supporting the achievement of project's objectives. The bases of Platform's development are placed in WPT1, transnational stakeholders are engaged and regional – national stakeholders are identified (thereinafter engaged in WPT2). The current and future situation in ADRION's connectivity, in terms of intermodality Public Transport (PuT) and rail based, as resulted from WPT1 will feed the Roadmap formulation of WPT3, consisting simultaneously a core input to the "Intermodality understanding tool" of Act. 3.3 (part of the capacity building toolkit).

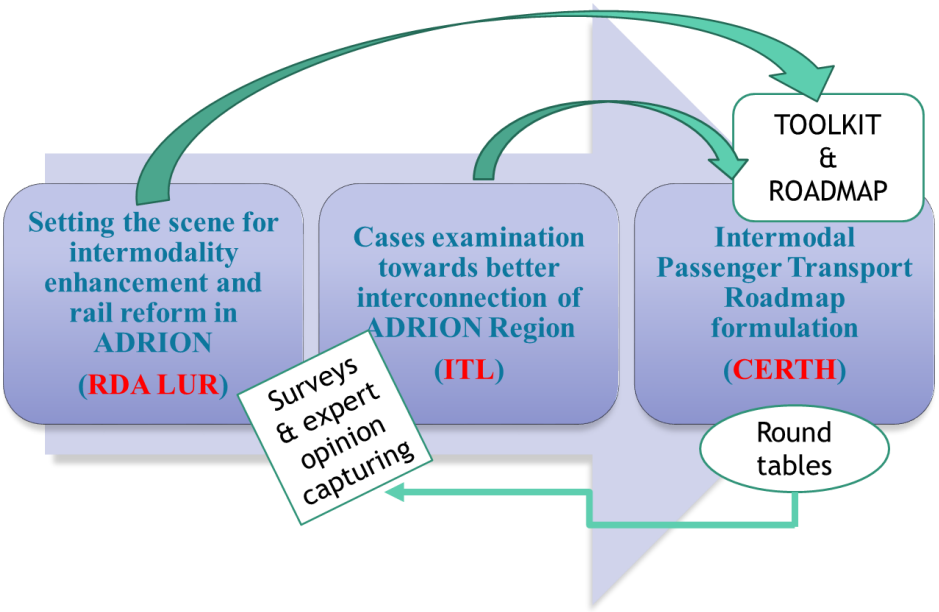

Figure 1: The technical work packages of Inter-Connect project and liaison points

The review of the policies and strategies aiming to strengthen intermodal and rail transport along with the best practices report are two outputs that can be used by every interested body across Europe since they are the apothegm of a generalized research study not focusing only in ADRION area. As for the methodology for demand and supply analysis determining the current and future connectivity of ADRION, this can be also used to gain a common understanding for other areas too (generalized methods to analyze passengers' connectivity). Instructions on how to plan and execute users' and experts' surveys are also provided as general principles for opinion capturing mechanisms. Finally, stakeholders' identification steps and the respective engagement strategy used for the formulation of Inter-Connect's Cooperation Platform are useful tools to be used by other cases too (either addressing transport issues or projects on other fields as well).

The major output of the first technical WP is the action plan on strengthening intermodal passenger transportation for achieving better (and low carbon) connectivity in ADRION Region. The action plan is basically recommendations regarding intermodal transport interventions that can guarantee upgraded environmental performance. The recommendations will come as a result of the understanding of transport policies at European level, the respective adoption rate at national, regional and local level and the needs as expressed by experts and real transport systems users, thus travellers.

1.2 Activity 1.3; "ADRION transnational connectivity"

Act.1.3 consists of all necessary actions to formulate ADRION's current&future connectivity map;
•Quantitative/qualitative analysis of transnational demand and supply under an intermodal perspective – current ADRION's interconnectivity
• Scenarios (2020,2030) for the future of ADRION's connectivity
• User needs & experts' opinions capturing feeding current & future ADRION's connectivity map

WPT1 closes with the definition/engagement of stakeholders at transnational level to participate in Inter-Connect's Cooperation Platform, a wide forum of key actors involved directly & indirectly in mobility that supports project's results sustainability (based on a sound engagement strategy). Through best practices experience, the partnership will also define regional/national actors to be involved in the Platform (engaged in WP2). The Cooperation Platform has started being formulated already from proposal phase with 24 bodies supporting project's implementation (LoS and associated). The signing of an MoU among the partners, the associated partners and the supporting bodies as well as with the identified-engaged stakeholders (with transnational role) will launch the fruitful cooperation for improving intermodality in ADRION. Later, during the WPT2, the MoU will be enhanced with the regional - national and local engaged stakeholders that expresses their commitment in Inter-Connect's goals.

The goals of activity 1.3, served by 4 deliverables (Table 1), can be summarized at the following;

Table 1: Activity 1.3 deliverables

Deliverable	Short description
Deliverable T1.3.1 Demand and Supply analysis of current situation in ADRION	The report presents the analysis of ADRION transport demand and supply (quantitative/qualitative technical analyses of transnational flows) defining in this way region's intermodal reference network (operational positioning of hubs).
Deliverable T1.3.2 Users need surveys & experts opinion capturing	The current deliverable presents the analysis of the users' needs and experts' opinions for higher interconnectivity & accessibility at transnational level in an intermodal perspective with a special focus on PuT and rail. The deliverable is highly linked to the DT2.1.1 where mobility needs at local level are presented, however, the presentation of the results is divided into two deliverables that serve the scope of each technical WP; the first one refers to the ADRION as a whole, the second

	goes deeper in local needs and the 3rd presents the complementary and continuity of proposed interventions at the two levels (ROADMAP).
Deliverable T1.3.3 Future scenarios development for ADRION's connectivity	Report with the analysis of intermodal (PuT and rail based) transport scenarios (2020,2030 horizons) as derived through the examination of the captive/generating traffic poles in ADRION.
Deliverable T1.3.4 Cooperation Platform	A living document describing platform's objectives, the engagement procedure to attract members' support, its members, the main discussion topics and the results of their activities. The current deliverable and in order to guarantee the well-cooperation and commitment among involved parties, will be accompanied with an MoU signed among them.

* Cases understanding & clustering (as for cases' transnational role)
* Transport demand and supply data collection
    * User needs & experts' opinions capturing – surveys and interviews
    * Desktop survey
* Quantitative/qualitative analysis of transnational demand and supply under an intermodal perspective – current ADRION's interconnectivity
* Formulation of Scenarios (2020,2030) for the future of ADRION's connectivity
* ADRION's transnational connectivity map development
* Inter-Connect's Cooperation Platform formulation – MoUs signing

1.3 Deliverable T1.3.1 "Demand and Supply analysis of current situation in ADRION"

The report presents the analysis of ADRION transnational transport supply (offered services and characteristics) as well as main transnational tourism data (flows by origin country) defining in this way region's intermodal reference network (operational positioning of hubs). Through the insight of the supply and demand, the report aims to conclude in key remarks as regards the strengths and the opportunities for upgrading areas' tourism attraction power while at the same time respecting sustainability goals (via promoting environmental friendlier ways of transport).

A first categorization of Inter-Connect cases as for their transnational role (terminals, services and flows) is depicted in Figure 2:

Figure 2: Inter-Connect cases as transnational hubs

2. Transport supply in ADRION – Inter-Connect country to country and case to case connectivity

For collecting transnational supply data the following templates were provided to partners.

SUPPLY DATA ROAD - COST (euro)

	Igoumenitsa	Bologna	Belgrade	Ljubljana	Trieste	Zagreb	Durres	Bar
Igoumenitsa	0							
Bologna		0						
Belgrade			0					
Ljubljana				0				
Trieste					0			
Zagreb						0		
Durres							0	
Bar								0

SUPPLY DATA ROAD - TIME (min)

	Igoumenitsa	Bologna	Belgrade	Ljubljana	Trieste	Zagreb	Durres	Bar
Igoumenitsa	0							
Bologna		0						
Belgrade			0					
Ljubljana				0				
Trieste					0			
Zagreb						0		
Durres							0	
Bar								0

SUPPLY DATA RAIL - COST (euro)

	Igoumenitsa	Bologna	Belgrade	Ljubljana	Trieste	Zagreb	Durres	Bar
Igoumenitsa	0							
Bologna		0						
Belgrade			0					
Ljubljana				0				
Trieste					0			
Zagreb						0		
Durres							0	
Bar								0

SUPPLY DATA RAIL - TIME (min)

	Igoumenitsa	Bologna	Belgrade	Ljubljana	Trieste	Zagreb	Durres	Bar
Igoumenitsa	0							
Bologna		0						
Belgrade			0					
Ljubljana				0				
Trieste					0			
Zagreb						0		
Durres							0	
Bar								0

SUPPLY DATA AIR - COST (euro)

	Igoumenitsa	Bologna	Belgrade	Ljubljana	Trieste	Zagreb	Durres	Bar
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Bologna		0						
Belgrade			0					
Ljubljana				0				
Trieste					0			
Zagreb						0		
Durres							0	
Bar								0

SUPPLY DATA AIR - TIME (min)

	Igoumenitsa	Bologna	Belgrade	Ljubljana	Trieste	Zagreb	Durres	Bar
Igoumenitsa	0							
Bologna		0						
Belgrade			0					
Ljubljana				0				
Trieste					0			
Zagreb						0		
Durres							0	
Bar								0

SUPPLY DATA MARITIME - COST (euro)

	Igoumenitsa	Bologna	Belgrade	Ljubljana	Trieste	Zagreb	Durres	Bar
Igoumenitsa	0							
Bologna		0						
Belgrade			0					
Ljubljana				0				
Trieste					0			
Zagreb						0		
Durres							0	
Bar								0

SUPPLY DATA MARITIME - TIME (min)

	Igoumenitsa	Bologna	Belgrade	Ljubljana	Trieste	Zagreb	Durres	Bar
Igoumenitsa	0							
Bologna		0						
Belgrade			0					
Ljubljana				0				
Trieste					0			
Zagreb						0		
Durres							0	
Bar								0

Figure 3: Transport supply data templates

All the information of the above data collection task was used to develop connectivity cards among pairs of Inter-Connect cases as presented in Annex 1. These cards were used as the main input for designing a stated preference survey for real transport network users, thus travellers – tourists as well as locals, for identifying crucial interventions to support the use of maritime and maritime-rail alternatives in ADRION region (presented in Del. 1.3.2).

2.1Country to country connectivity

The country – country supply analysis showed that affordable maritime and rail services (combination of travel time, costs and transfers comparison with the other modes or modes combination) are offered in some cases as presented in Table 2.

Table 2: Affordable services among Inter-Connect countries

affordable maritime connectivity

		IT		GR	SL	HR	ME	SB	AL	B&E
		(northern Italy)	(south part)							
IT	(northern Italy)									
	(south part)									
GR										
SL										
HR										
ME										
SB										
AL										
B&E										

affordable rail connectivity

		IT		GR	SL	HR	ME	SB	AL	B&E
		(northern Italy)	(south part)							
IT	(northern Italy)									
	(south part)									
GR										
SL										
HR										
ME										
SB										
AL										
B&E										

Taking into account the above tables, the following graph is an attempt to provide a visualized positioning map of Inter-Connect countries. Each element (color, size, gradient fill, positioning) represents country's positioning – connectivity - (maritime connectivity in blue, rail connectivity in orange) without geolocation reference.

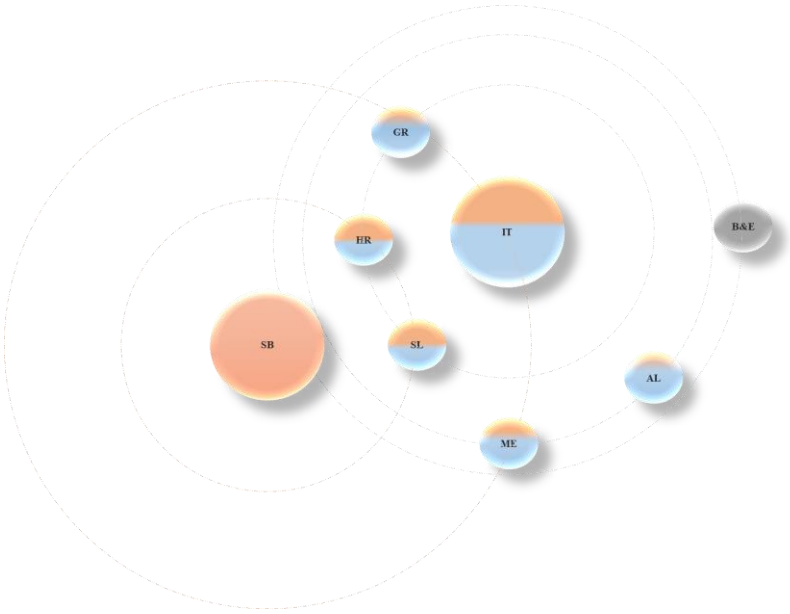


Figure 4: Inter-Connect countries rail and maritime connectivity, supply data

The above figure embeds/describes the following:

- Italy is characterized by a high level of maritime connectivity (some of them being seasonal and some regular services) with the other ADRION countries in the Balkans and South-East Europe. Especially with reference to the southern part of the country, the maritime links are particularly relevant since they allow bypassing a long detour in reaching the Balkans. Northern Italy presents also good rail connectivity with the Western Balkans (WBs) and central European countries, although the supplied services still have a high margin of improvement.
- The rest 7 sea surrounded ADRION countries are not well connected among each other.
- Serbia from the other side seems to be the major rail hub in ADRION presenting direct or either indirect (with transfers) connectivity to the last leg of Europe – Greece and the rest Inter-Connect countries.
- Croatia and Slovenia have good rail connection among them and with Serbia and regular maritime services to Italy. Recently, a new cross border train service started operating between Trieste and Ljubljana linking Italy with Slovenia.

2.2 Case to case connectivity

The situation is slightly differentiated when examining connectivity among wider catchment areas of cases (Table 3). This is due to the fact that Inter-Connect cases are not selected to the main rail or maritime hubs of their country but they were selected from the proposal phase as ADRION gates and interesting hubs for further promoting sustainability goals.

Table 3: Affordable services among Inter-Connect cases[1]

[1] The term 'affordable' refers to both acceptable travel duration and cost, considering also the existence of alternatives

affordable maritime connectivity

		IT		GR	SL	HR	ME	SB	AL
		Bologna	Trieste	Igoumenitsa	Ljubljana	Zagreb	Bar	Belgrade	Durres
IT	Bologna			(multimodal)					
	Trieste					(multimodal)			
GR	Igoumenitsa	(multimodal)							
SL	Ljubljana								
HR	Zagreb		(multimodal)						
ME	Bar								
SB	Belgrade								
AL	Durres								

affordable rail connectivity

		IT		GR	SL	HR	ME	SB	AL
		Bologna	Trieste	Igoumenitsa	Ljubljana	Zagreb	Bar	Belgrade	Durres
IT	Bologna								
	Trieste								
GR	Igoumenitsa								
SL	Ljubljana								
HR	Zagreb								
ME	Bar								
SB	Belgrade								
AL	Durres								

Belgrade can be considered as the main rail hub in the examined area connecting Central and Northern European countries and Italy to Balkans. Igoumenitsa and Durres are not directly rail connected to the rest cases (namely, Igoumenitsa is not connected to the rail network) while Bologna and Trieste is effectively connected with Ljubljana and Zagreb (Starting from September 2018 a new cross border train service is operating between Trieste and Ljubljana. Already existing trains connect main cities in Italy with Trieste. No direct trains from Bologna/Venice to Ljubljana).

2.3Comments on the transnational connectivity – supply based

Based on the data collected as for the transnational connectivity of the Inter-Connect countries/hubs, the charts in Figure 7 are derived (note: given that we are examining ADRION area, except of Belgrade being an inland hub (SB), as for Croatia and Slovenia we estimated as destination points for our search the coastal cities of Split and Piran respectively).

Based on the facts presented in Figure 7 while injecting the existing intuition and knowledge for the cases, we can reach the following insights:

- Almost all Inter-Connect cases are well-served by air (38/56) and road (48/56) transport
- On average for reaching Inter-Connect cases 7h are required by air, 13h by combining rail and maritime services, 25h in case of using maritime services, 13h by rail and around 9h by road – of course the real situation per case is slightly different since we refer to average values. Even however with average values we can say from a first sight that maritime services

are not an attractive alternative – the situation is different when the distances are short and when high speed ferries are used.

- The last message for the maritime services (not attractive alternative) can be further supported while comparing average trip costs – 208€ for maritime services, 360 for air transport, 153€ in the cases where combination of rail and maritime services are feasible, 90€ for road transportation and 70€ for the cases that rail can be used. Road transport seems still (even with the increase of fuel costs) a convenient travel choice, a choice that is greatly cost-efficient when more than one persons are travelling. Furthermore, new travel options as the low cost bus services attract an increasing number of travellers.

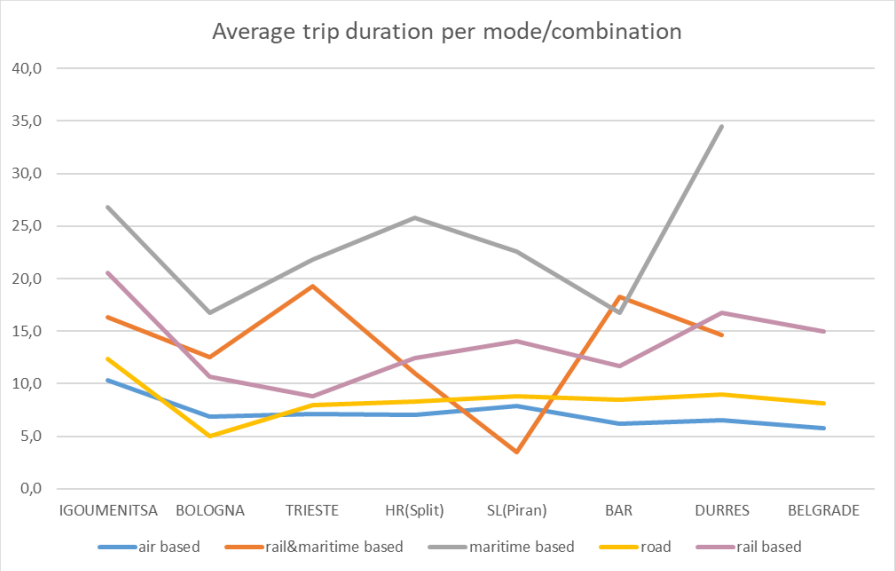


Figure 5: Average trip duration per mode per case (for existing and feasible connections)[2]

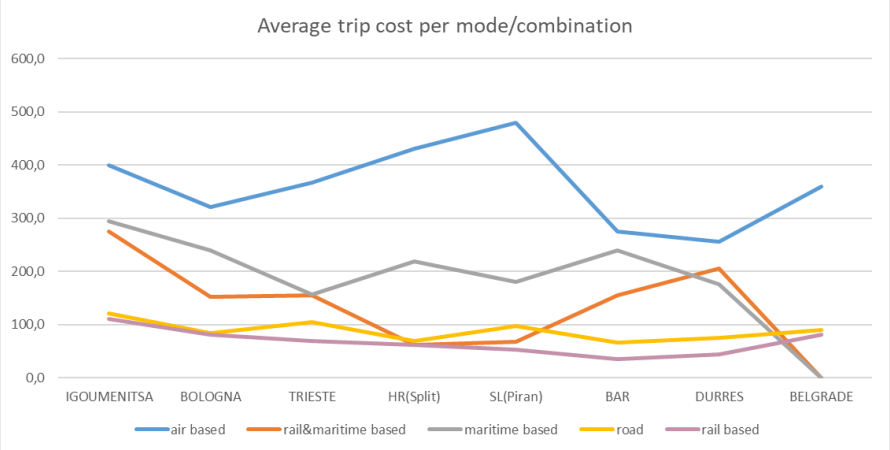
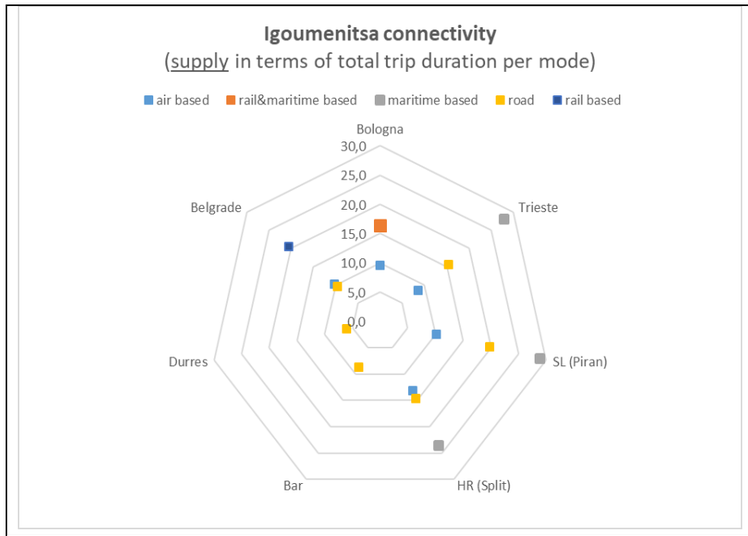
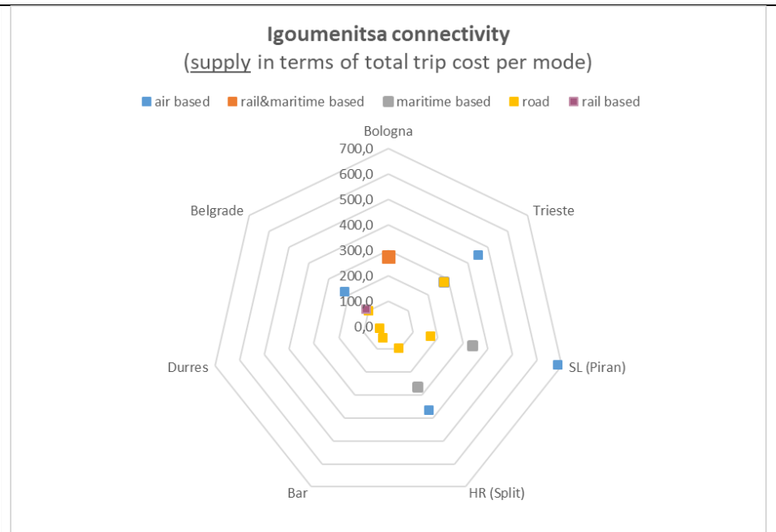
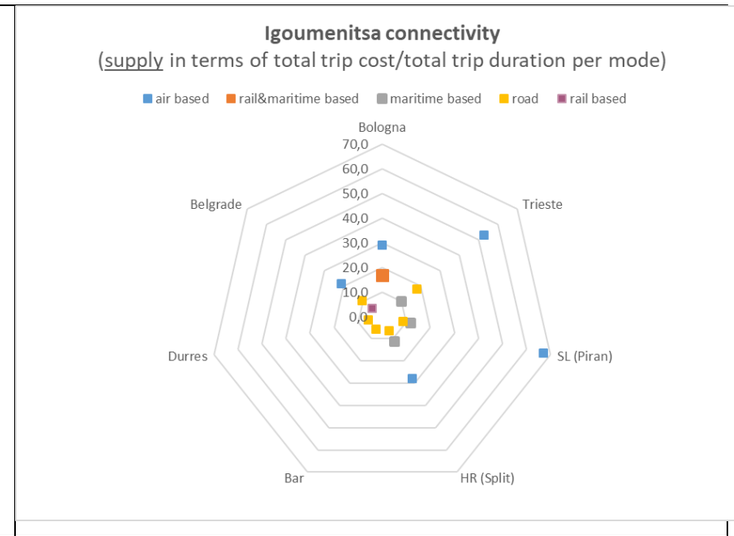


Figure 6: Average trip duration per mode per case (for existing and feasible connections)

[2] *The charts present average values for existing feasible connections; for example for the cases that present lower rail travel times that these involving Belgrade (the only hub offering multimodal rail based options even if in the majority of cases are not the most efficient), the explanation comes from the fact that just the nearby rail-cities are taken into account (e.g. for the case of Trieste, the rail based multimodal options that are taken into consideration is to Bologna – 3.9h, to Split – 10.5h – and Belgrade – 12.2h - / on average 8.8h)*


Igoumenitsa connectivity
(supply in terms of total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
SL (Piran)
HR (Split)
Bar
Durres
Belgrade
30,0
25,0
20,0
15,0
10,0
5,0
0,0


Igoumenitsa connectivity
(supply in terms of total trip cost per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
SL (Piran)
HR (Split)
Bar
Durres
Belgrade
700,0
600,0
500,0
400,0
300,0
200,0
100,0
0,0


Igoumenitsa connectivity
(supply in terms of total trip cost/total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
SL (Piran)
HR (Split)
Bar
Durres
Belgrade
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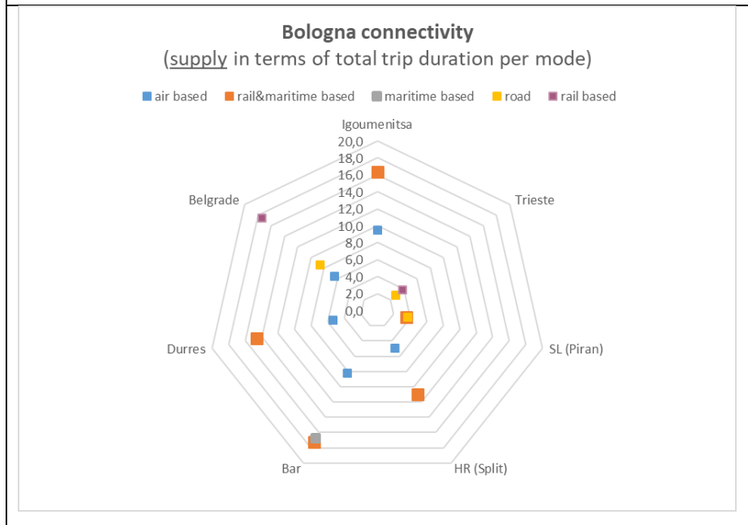
10,0
0,0


Bologna connectivity
(supply in terms of total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Igoumenitsa
Trieste
SL (Piran)
HR (Split)
Bar
Durres
Belgrade
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18,0
16,0
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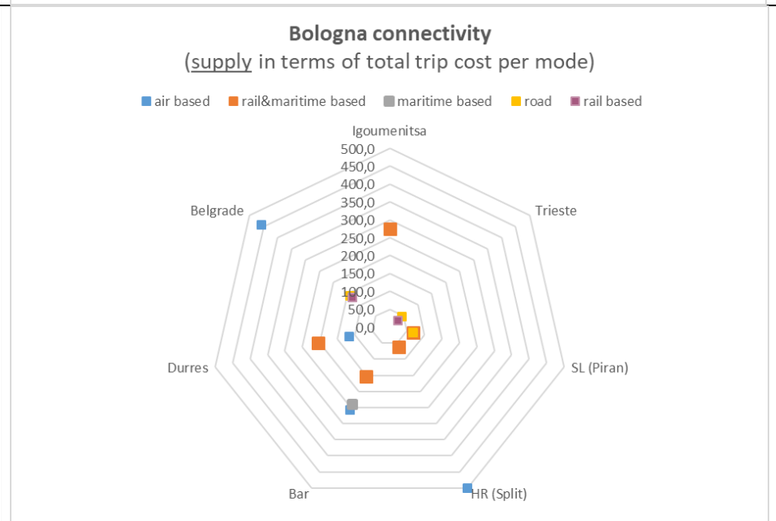
2,0
0,0


Bologna connectivity
(supply in terms of total trip cost per mode)
air based
rail&maritime based
maritime based
road
rail based
Igoumenitsa
Trieste
SL (Piran)
HR (Split)
Bar
Durres
Belgrade
500,0
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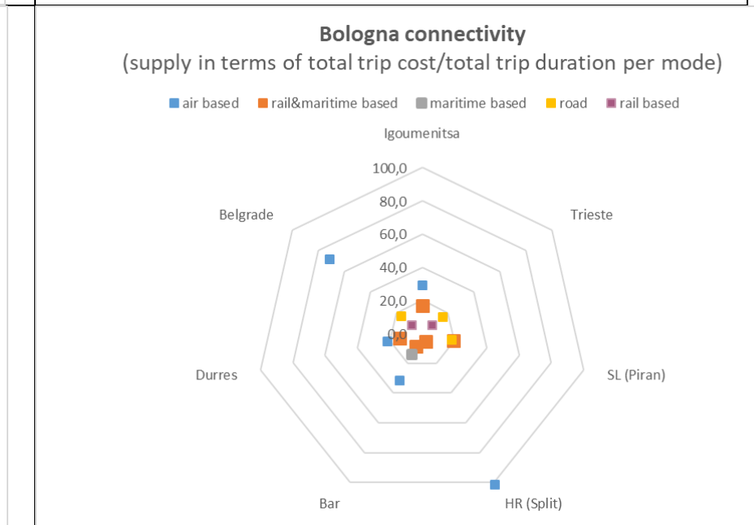
400,0
350,0
300,0
250,0
200,0
150,0
100,0
50,0
0,0


Bologna connectivity
(supply in terms of total trip cost/total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Igoumenitsa
Trieste
SL (Piran)
HR (Split)
Bar
Durres
Belgrade
100,0
80,0
60,0
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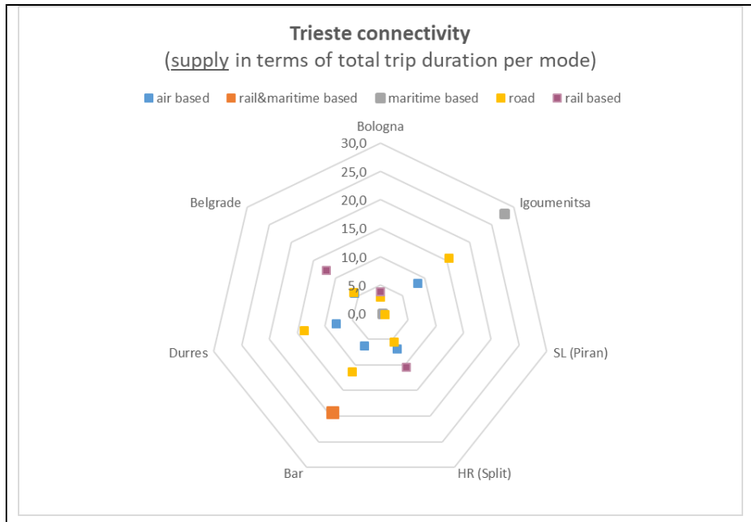
20,0
0,0


Trieste connectivity
(supply in terms of total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Igoumenitsa
SL (Piran)
HR (Split)
Bar
Durres
Belgrade
30,0
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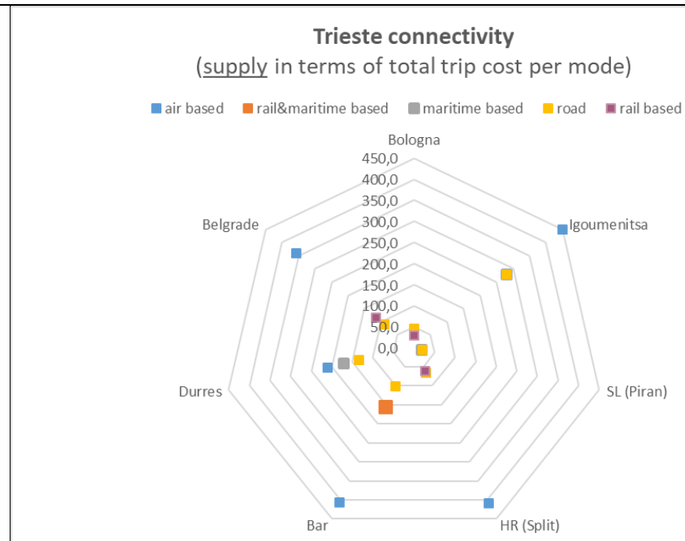
Trieste connectivity
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air based
rail&maritime based
maritime based
road
rail based
Bologna
Igoumenitsa
SL (Piran)
HR (Split)
Bar
Durres
Belgrade
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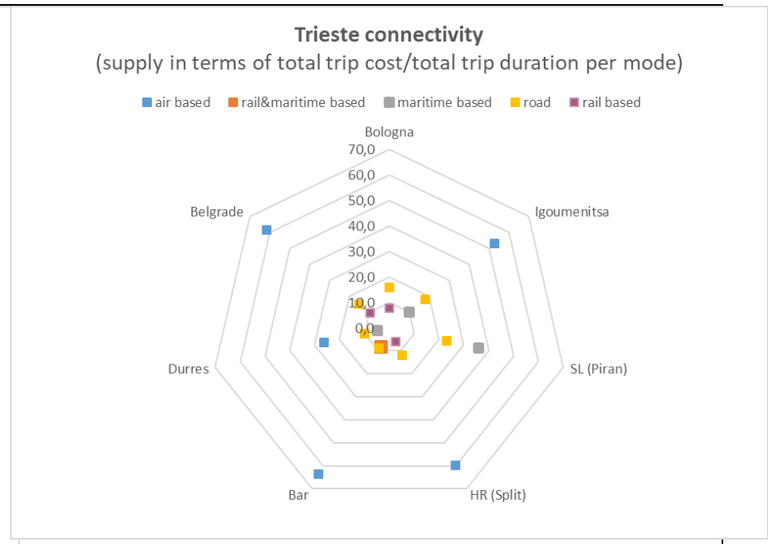
Trieste connectivity
(supply in terms of total trip cost/total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Igoumenitsa
SL (Piran)
HR (Split)
Bar
Durres
Belgrade
70,0
60,0
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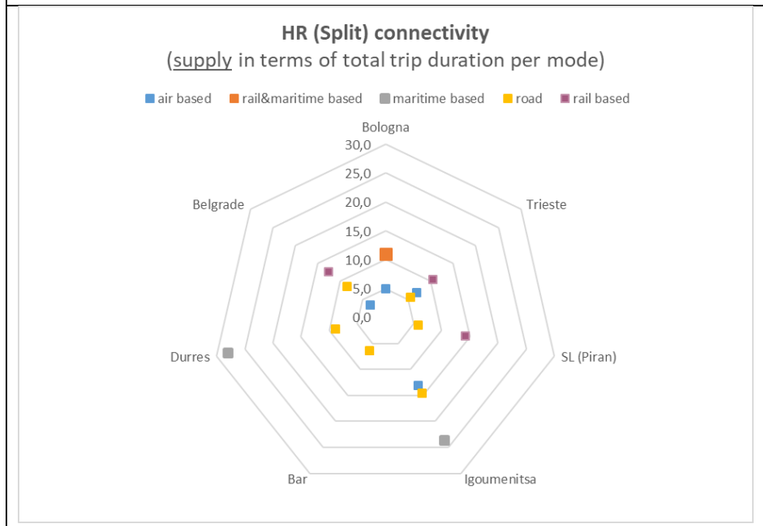
HR (Split) connectivity
(supply in terms of total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
SL (Piran)
Igoumenitsa
Bar
Durres
Belgrade
30,0
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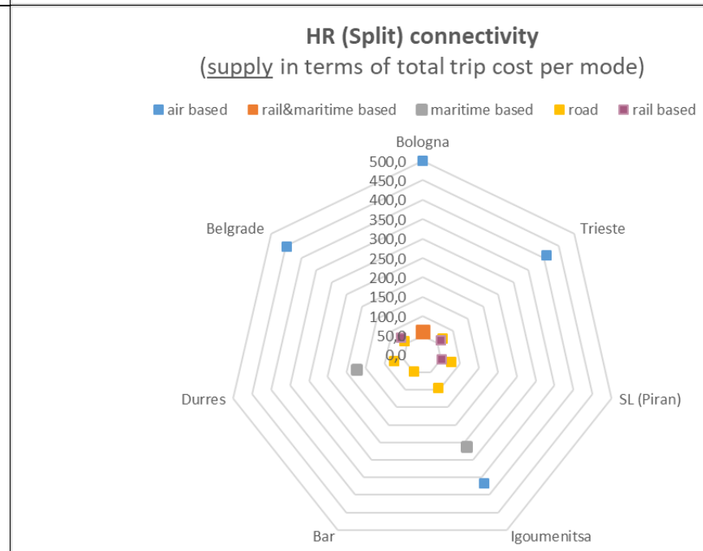
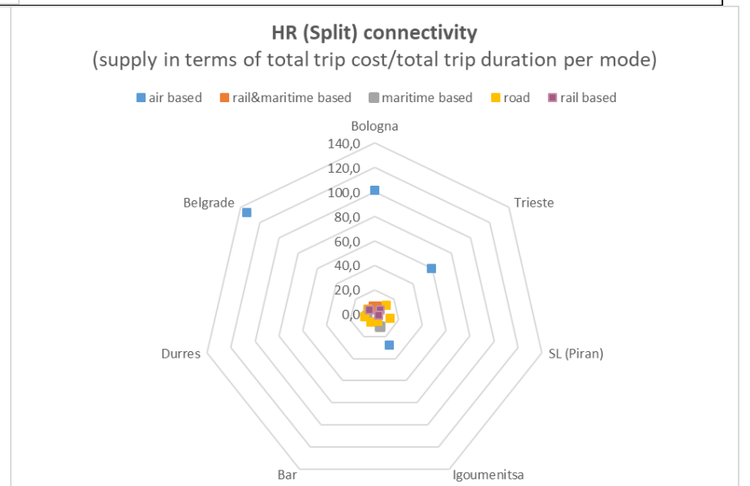
20,0
15,0
10,0
5,0
0,0


HR (Split) connectivity
(supply in terms of total trip cost per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
SL (Piran)
Igoumenitsa
Bar
Durres
Belgrade
500,0
450,0
400,0
350,0
300,0
250,0
200,0
150,0
100,0
50,0
0,0


HR (Split) connectivity
(supply in terms of total trip cost/total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
SL (Piran)
Igoumenitsa
Bar
Durres
Belgrade
140,0
120,0
100,0
80,0
60,0
40,0
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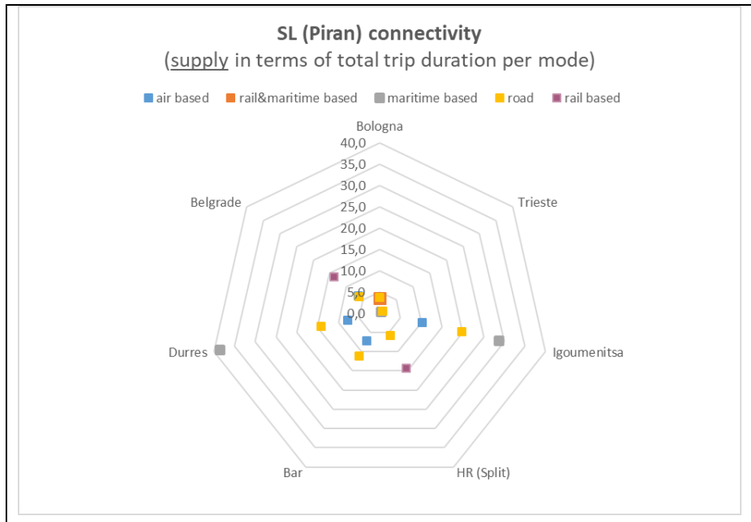
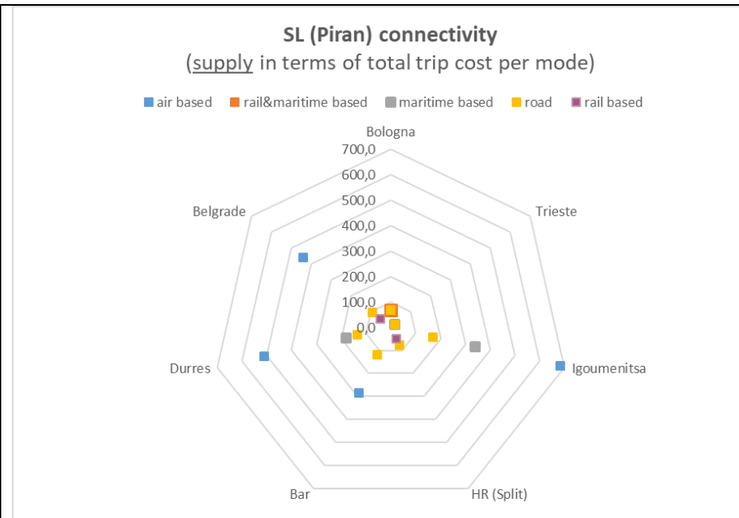
0,0


SL (Piran) connectivity
(supply in terms of total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
Igoumenitsa
HR (Split)
Bar
Durres
Belgrade
40,0
35,0
30,0
25,0
20,0
15,0
10,0
5,0
0,0


SL (Piran) connectivity
(supply in terms of total trip cost per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
Igoumenitsa
HR (Split)
Bar
Durres
Belgrade
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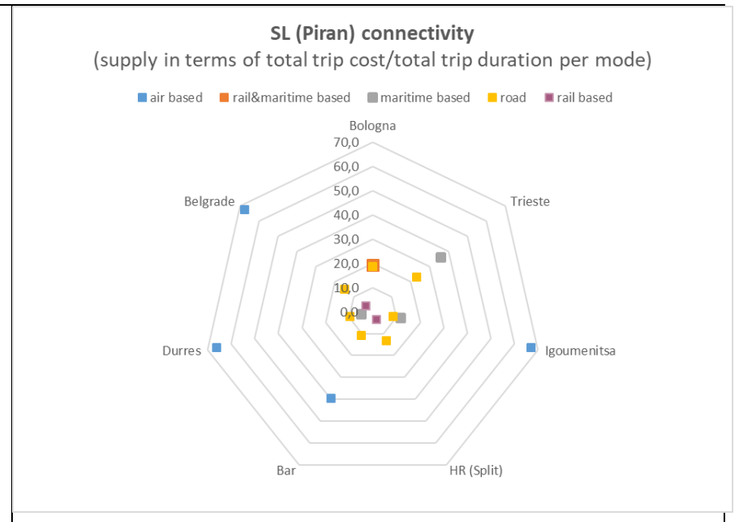
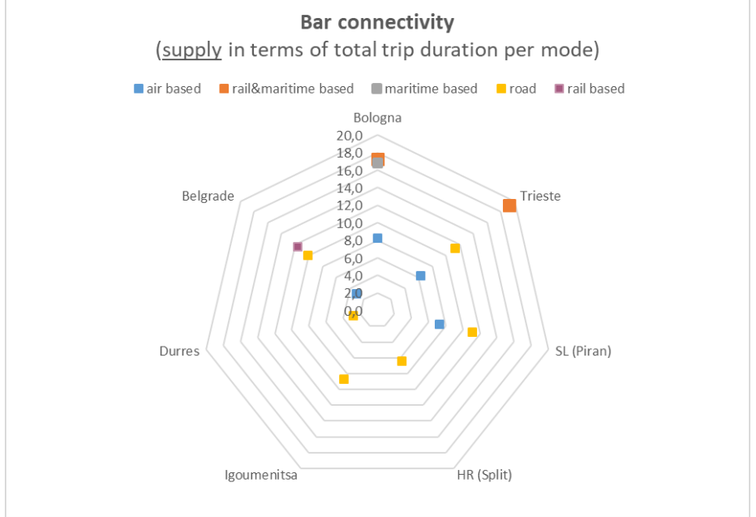
600,0
500,0
400,0
300,0
200,0
100,0
0,0


SL (Piran) connectivity
(supply in terms of total trip cost/total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
Igoumenitsa
HR (Split)
Bar
Durres
Belgrade
70,0
60,0
50,0
40,0
30,0
20,0
10,0
0,0


Bar connectivity
(supply in terms of total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
SL (Piran)
HR (Split)
Igoumenitsa
Durres
Belgrade
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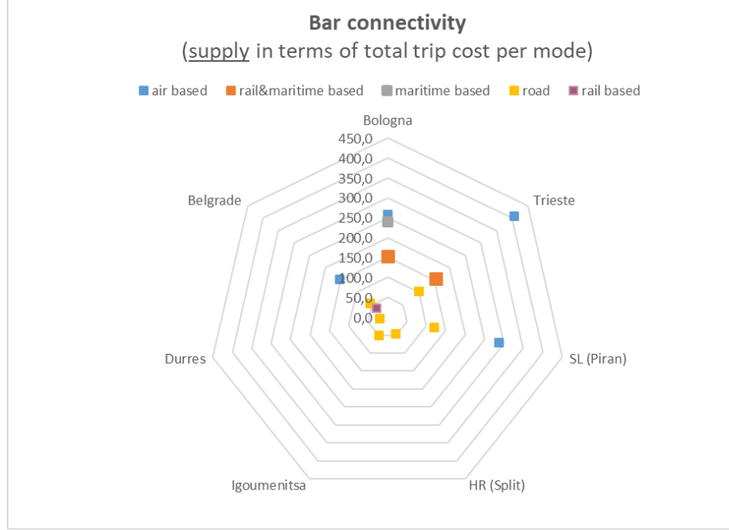
18,0
16,0
14,0
12,0
10,0
8,0
6,0
4,0
2,0
0,0


Bar connectivity
(supply in terms of total trip cost per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
SL (Piran)
HR (Split)
Igoumenitsa
Durres
Belgrade
450,0
400,0
350,0
300,0
250,0
200,0
150,0
100,0
50,0
0,0

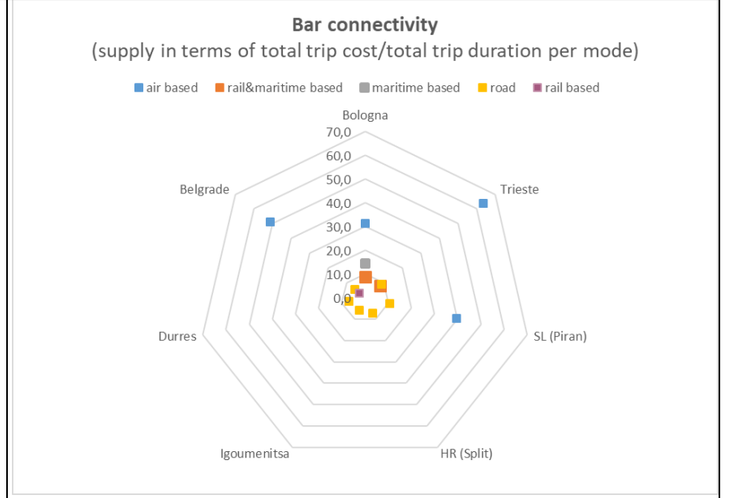

Bar connectivity
(supply in terms of total trip cost/total trip duration per mode)
air based
rail&maritime based
maritime based
road
rail based
Bologna
Trieste
SL (Piran)
HR (Split)
Igoumenitsa
Durres
Belgrade
70,0
60,0
50,0
40,0
30,0
20,0
10,0
0,0

Figure 7: Transport supply charts for Inter-Connect countries (in terms of total trip duration, total trip cost, and total cost/total duration index)

The above analysis along with the knowledge gathered by partners revealed the following:

- In almost all cases, although air transport is the most expensive selection, the shorter trip duration counterbalances the situation while making air mode selection the most preferable choice (message verified also through Inter-Connect surveys). When direct air connections and low cost airlines serve hub-to-hub connectivity, it seems that air is the most effective mode.
- Maritime and rail based transportation presents high trip durations (not affordable in some cases) accompanied with comparatively high cost. The need for transfers also decreases the attractiveness of selecting maritime and rail based multimodal connections. Even when maritime and rail direct connections exist among hubs (nearby hubs/countries in the majority of cases) road competition is high and probably accompanying incentives should be given in order to achieve the desired modal shift.

- As for Greece's Connectivity

Through Adriatic - Ionian, Greece is connected via maritime services just with Italy (Bari, Brindisi, Ancona, Venice), offering, however in this way, connectivity (and entrance) to Central Europe.

From the other side, rail connection of Greece is only possible via the rail hub of Thessaloniki that is connected directly to Sofia and Skopje. Being the very last leg of Europe, Greece's rail connection to the rest countries (except Bulgaria and NORTHERN MACEDONIA) are time-consuming procedures (many transfers, inexistence of integrated tickets and harmonized timetables, long trips duration)and therefore not considered as affordable by travellers (low current demand).

For Igoumenitsa, given its positioning in Western Greece (gate for ADRION) and due to the fact that the city is neither served by a nearby airport serving flights to ADRION cities nor by rail services (not connected to the main Greek railway network – Thessaloniki's railway station is the railway gate to the Balkans that is accessible from Igoumenitsa just by road transport), road transport seems the most effective. However, since driving from Albania to Montenegro in some points requires extra caution (not renewed throughout the whole length of road axis) also the road connectivity is not considered as of high quality. Road transportation to Thessaloniki and then transfer to rail network is not sufficient either for reaching Belgrade (the central rail hub for the examined area) – total duration 20.5h with many transfers and different trip parts.

- As for Italy's Connectivity

Northern part of Italy is, by sea, connected with Croatia, Slovenia and Greece (long trip duration however, 1 day on average). Better maritime connections to Greece (in terms of duration) are available from Southern Italian Ports (Bari, Brindisi). Bari is also connected to Montenegro (Bar) and Albania (Durres) and Brindisi to Albania (Vlores). The shortest the distance, the more effective and affordable the travel.

As regards rail connectivity of Italy, since September 2018 in the framework of the CBC Interreg Italy Slovenia Programme, a new experimental train connection is operating, linking Trieste to Ljubljana and, from there, to Zagreb and to the remaining countries rail connections exist with the recognized drawbacks (mainly as regards the part from Belgrade and down).

- As for Slovenia's Connectivity

Inland part of Slovenia (with main hub this of Ljubljana) is effectively connected to the inland part of Croatia (Zagreb hub). Direct coastal SL to coastal HR connections do not exist. Maritime connections exist among Slovenia and Northern Italian Ports (Trieste, Venice).

- As for Croatia's Connectivity

Existing maritime connections from Croatia to Bologna and Trieste are not really existing in a one continuous journey. Ships are operating on Split – Ancona route and then from Italian side other connections to Bologna and Trieste. Service is possible but it takes train ride from Zagreb to Split and then continuation of journey further with ferry. This is journey with at least two or three transfers and it cannot be classified as affordable in sense of time consuming. Service frequency is two times per day. However it is very efficient.

Regarding rail connections, the situation is: Train from Zagreb goes directly to Ljubljana. This is regular service with five trains per day, direct service, affordable, frequent and efficient. From Ljubljana to Trieste the user has to use bus service which is incorporated from Slovenian side. Due to lack of rail infrastructure service is provided by bus operator which has concluded contract with Slovenian railways and is offering service instead of SŽ. Further train ride to Bologna is by train. The traveller can buy train ticket in Zagreb for whole journey but it is necessary to make reservations for bus service.

Zagreb- Belgrade is also train ride with direct train, affordable service for passenger but not frequent. It is daily service (once per day) and therefore it is not efficient enough for operator.

In conclusion, Slovenia have direct connections with neighbouring countries Serbia and Slovenia, and Italy is possible to reach in two or three steps, same as Montenegro, Greece etc.

- As for Montenegro's Connectivity

Maritime connectivity of Montenegro is limited to Bar- Bari (Italy) services. As regards rail connectivity, Montenegro is connected just to Serbia (Bar – Belgrade: 12hours duration).

- As for Albania's Connectivity

As a matter a fact the connectivity of Albania is not as it should be. Regarding maritime services the port of Durres is the main gate and have connection with Italy. As per rail transport Albania don't have connection with neighbor countries but it does exist a rail line connection with Montenegro (Durres to TUZ /Montenegro which is in use only for freight).

- As for Serbia's Connectivity

Regarding that international trains are with reduced number of departures due to construction of new railway tracks within Belgrade Railway Node, as well as numerous delays due to low level of infrastructure and high number of points with slow ride regime, just railway connections among Serbia and Slovenia (Belgrade and Ljubljana) could be assessed as good.

3. Transport demand in ADRION

3.1 NUTS0 based analysis – touristic flows country to country

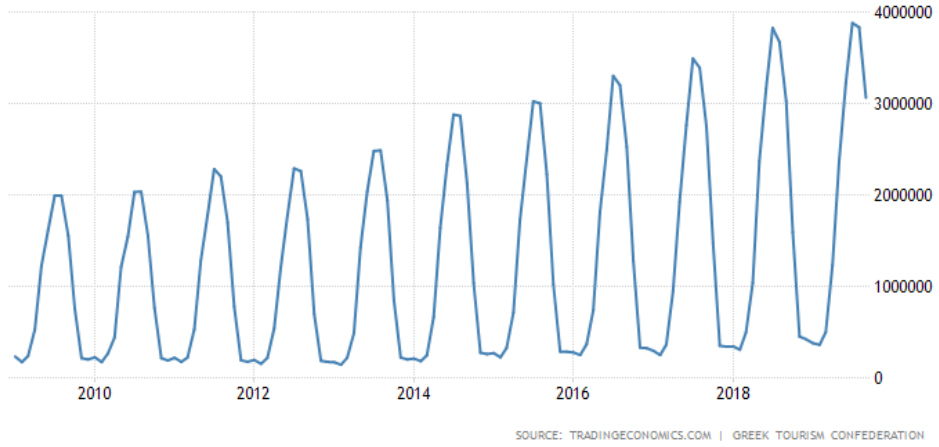
3.1.1 Key figure of incoming tourism in Greece and Epirus Region

With more than 27 million foreign tourists and over 4 million cruise passengers, as well as 15 billion euros of revenue, Greece has scored the best tourist season in its history at 2017. Around 8% from this number comes directly from ADRION countries (Italy and Albania).

Αφίξεις μη κατοίκων από το εξωτερικό ανά χώρα προέλευσης (σε χιλ.) / Arrivals of non-residents by country of origin (in thous.)									
Χώρες προέλευσης	Countries of Origin	2010	2011	2012	2013	2014	2015	2016	2017
Χώρες Ευρωζώνης	***Eurozone***	**6,147**	**6,622**	**5,903**	**6,379**	**7,457**	**8,189**	**8,935**	**9,863**
Αυστρία	Austria	338	310	236	236	285	327	359	396
Βέλγιο	Belgium	340	433	327	345	409	483	467	527
Γαλλία	France	868	1,149	977	1,152	1,463	1,522	1,314	1,420
Γερμανία	Germany	2,039	2,240	2,109	2,268	2,459	2,810	3,139	3,706
Ισπανία	Spain	155	155	156	92	136	94	203	164
Ιταλία	Italy	844	938	848	964	1,118	1,355	1,387	1,441
Κύπρος	Cyprus	575	440	425	399	448	470	652	632
Ολλανδία	Netherlands	528	561	478	581	657	639	771	947
Λοιπές	Others	460	395	347	342	480	489	644	631
Χώρες ΕΕ εκτός Ευρωζώνης	***EU countries outside Eurozone***	**4,065**	**4,105**	**3,900**	**4,148**	**5,793**	**6,785**	**8,282**	**8,720**
Δανία	Denmark	241	245	205	202	240	238	242	279
Ηνωμένο Βασίλειο	United Kingdom	1,802	1,758	1,921	1,846	2,090	2,397	2,895	3,002
Ρουμανία	Romania	258	224	230	279	543	540	1,026	1,149
Σουηδία	Sweden	281	334	320	369	338	352	413	493
Τσεχία	Czech Rebuplic	295	309	289	287	348	437	280	339
Λοιπές	Others	1,188	1,235	935	1,164	2,234	2,822	3,426	3,457
Λοιπές Χώρες	***Other Countries***	**4,795**	**5,701**	**5,714**	**7,392**	**8,784**	**8,625**	**7,583**	**8,611**
Αλβανία	Albania	242	411	469	505	488	491	722	829
Αυστραλία	Australia	108	116	118	129	183	183	169	324
Ελβετία	Switzerland	274	361	300	347	377	391	438	449
ΗΠΑ	USA	498	485	374	467	592	750	779	865
Καναδάς	Canada	113	142	103	187	146	182	153	198
Ρωσία	Russia	451	739	875	1,353	1,250	513	595	589
Λοιπές	Others	3,107	3,446	3,476	4,406	5,748	6,114	4,726	5,358
Σύνολο αφίξεων**	**Total arrivals****	**15,007**	**16,427**	**15,518**	**17,920**	**22,033**	**23,599**	**24,799**	**27,194**

Figure 8: Arrivals in Greece of non-residents by country (in thous.), Bank of Greece

Foreign tourist arrivals in Greece rose by 8.3 percent year-on-year to 3.673 million in August 2018. Tourist Arrivals in Greece averaged 1146869.31 persons from 2007 until 2018, reaching an all time high of 3832333 persons in July of 2018 and a record low of 140107 persons in February of 2013 [Trading Ecomonics].



World Tourism Organization (2018), Yearbook of Tourism Statistics dataset [Electronic], UNWTO, Madrid, data updated on 19/01/2018.
Conceptual references and technical notes are available in the Methodological Notes to the Tourism Statistics Database:
http://statistics.unwto.org/news/2017-03-17/methodological-notes-tourism-statistics-database-2017-edition

GREECE

1. Arrivals of non-resident tourists at national borders, by country of residence

	2012	2013	2014	2015	2016	Market share 2016	% Change 2016-2015
TOTAL (*)	**15,517,625**	**17,919,578**	**22,033,466**	**23,599,455**	**24,799,350**	**100.00**	**5.08**
AFRICA	**32,688**	**26,867**	**39,980**	**35,608**			
SOUTHERN AFRICA	**19,686**	**17,644**	**24,680**	**26,055**			
South Africa	19,686	17,644	24,680	26,055			
OTHER AFRICA	**13,002**	**9,223**	**15,300**	**9,553**			
Other countries of Africa	13,002	9,223	15,300	9,553			
AMERICAS	**558,729**	**754,487**	**890,318**	**1,094,749**	**931,443**	**3.76**	**-14.92**
NORTH AMERICA	**484,592**	**673,084**	**758,052**	**948,449**	**931,443**	**3.76**	**-1.79**
Canada	102,694	186,701	145,720	182,299	152,815	0.62	-16.17
Mexico	8,067	19,863	20,479	15,900			
United States of America	373,831	466,520	591,853	750,250	778,628	3.14	3.78
SOUTH AMERICA	**51,332**	**52,843**	**84,823**	**100,250**			
Argentina	20,207	25,488	32,606	34,662			
Brazil	31,125	27,355	52,217	65,588			
OTHER AMERICAS	**22,805**	**28,560**	**47,443**	**46,050**			
Other countries of the Americas	22,805	28,560	47,443	46,050			
EAST ASIA AND THE PACIFIC	**215,864**	**238,157**	**365,583**	**362,267**	**169,168**	**0.68**	**-53.30**
NORTH-EAST ASIA	**27,145**	**48,776**	**79,568**	**85,160**			
China	12,203	28,328	47,482	55,097			
Japan	8,841	13,141	18,698	9,983			
Korea, Republic of	6,101	7,307	13,388	20,080			
AUSTRALASIA	**117,852**	**129,112**	**183,080**	**183,165**	**169,168**	**0.68**	**-7.64**
Australia	117,852	129,112	183,080	183,165	169,168	0.68	-7.64
OTHER EAST ASIA AND THE PACIFIC	**70,867**	**60,269**	**102,935**	**93,942**			
Other countries of Asia	55,351	46,739	80,628	65,136			
Other countries of Oceania	15,516	13,530	22,307	28,806			
EUROPE	**14,661,081**	**16,821,975**	**20,650,820**	**21,984,580**	**19,146,764**	**77.21**	**-12.91**
CENTRAL/EASTERN EUROPE	**2,404,238**	**3,183,230**	**4,534,851**	**4,483,567**	**4,424,723**	**17.84**	**-1.31**
Bulgaria	599,110	691,874	1,534,565	1,900,642	2,522,800	10.17	32.73
Czech Republic	289,034	286,974	347,624	436,703	280,331	1.13	-35.81
Estonia	4,757	8,094	30,551	23,323			
Hungary	69,789	80,623	89,064	146,380			
Latvia	15,300	20,283	31,085	33,709			
Lithuania	21,601	31,874	57,890	60,143			
Poland	254,682	385,474	588,712	754,402			
Romania	230,396	278,873	543,360	540,289	1,026,110	4.14	89.92
Russian Federation	874,787	1,352,901	1,250,174	512,789	595,482	2.40	16.13
Slovakia	44,782	46,260	61,826	75,187			
NORTHERN EUROPE	**2,928,408**	**2,865,954**	**3,153,166**	**3,455,509**	**3,549,464**	**14.31**	**2.72**
Denmark	205,194	202,477	240,419	237,655	241,697	0.97	1.70
Finland	154,134	139,341	166,251	149,894			
Iceland	2,059	1,578	3,528	1,705			
Ireland	32,357	42,575	69,532	72,654			
Norway	294,114	264,816	246,136	244,859			
Sweden	319,756	368,834	337,771	351,573	413,112	1.67	17.50
United Kingdom	1,920,794	1,846,333	2,089,529	2,397,169	2,894,655	11.67	20.75
SOUTHERN EUROPE	**2,151,868**	**2,373,363**	**5,140,778**	**5,763,423**	**4,033,639**	**16.27**	**-30.01**
Albania	469,213	504,809	488,099	491,381	722,347	2.91	47.00
Croatia			21,889	20,136			
Italy	848,073	964,314	1,117,712	1,355,327	1,386,902	5.59	2.33
Malta	2,206	1,494	3,701	9,867			
Portugal	20,483	13,304	14,206	17,821			
Serbia	620,450	778,765	985,661	727,831			
Slovenia	35,721	18,689	26,698	24,377			
Spain	155,722	91,988	136,232	93,624	203,290	0.82	117.13

Figure 9: Tourism in Epirus Region, UNWTO

Although for some years Serbian tourists have stopped showing their preference to Greece, during the 2018 Serbian tourists arrivals reached the number of 1.1 million.

Coming to Epirus Region, the Region where Igoumenitsa – Inter-Connect case belongs to, 2.3% of the total tourists arrivals visited Epirus Region, mainly referring to arrivals from Albania, a neighbor country and Italy.

Βασικά Μεγέθη Εισερχόμενου Τουρισμού της Περιφέρειας Ηπείρου 2017
Key figures of incoming tourism in Epirus Region 2017

Περιφέρειες	Χώρες Προέλευσης		Επισκέψεις (σε χιλ.)	Εισπράξεις (σε εκ. €)	Διανυκτερεύσεις (σε χιλ.)	Δαπάνη/ Επίσκεψη (σε €)	Δαπάνη/ Διανυκτέρευση (σε €)	Μέση Διάρκεια Παραμονής
Regions		Countries of origin	Visits (in th.)	Receipts (in mil. €)	Overnights (in th.)	Expenditure per visit (in €)	Daily spend (in €)	Length of Stay
	Αλβανία	Albania	203.1	33.4	324.5	164.6	103.0	1.6
	Γερμανία	Germany	75.1	42.5	829.6	565.3	51.2	11.0
Ήπειρος / Epirus	Ην. Βασίλειο	UK	55.9	30.2	436.7	541.1	69.2	7.8
	Ιταλία	Italy	53.3	17.7	316.4	332.1	56.0	5.9
	Λοιπές	Others	326.0	92.6	1,736.0	-	-	-
	Σύνολο	**Total**	**713.4**	**216.4**	**3,643.2**	**303.3**	**59.4**	**5.1**
	% επί του συνόλου	**as a percentage of the total**	**2.3%**	**1.5%**	**1.7%**			

Πηγή: Τράπεζα της Ελλάδος, Επεξεργασία: SETE Intelligence/ **Source:** Bank of Greece, Processing: SETE Intelligence

Βασικά Μεγέθη Εισερχόμενου Τουρισμού της Περιφέρειας Ηπείρου 2016
Key figures of incoming tourism in Epirus Region 2016

Περιφέρειες	Χώρες Προέλευσης		Επισκέψεις (σε χιλ.)	Εισπράξεις (σε εκ. €)	Διανυκτερεύσεις (σε χιλ.)	Δαπάνη/ Επίσκεψη (σε €)	Δαπάνη/ Διανυκτέρευση (σε €)	Μέση Διάρκεια Παραμονής
Regions		Countries of origin	Visits (in th.)	Receipts (in mil. €)	Overnights (in th.)	Expenditure per visit (in €)	Daily spend (in €)	Length of Stay
	Αλβανία	Albania	192.6	34.3	294.8	177.9	116.2	1.5
	Γερμανία	Germany	72.8	39.4	803.8	540.9	49.0	11.0
Ήπειρος / Epirus	Ιταλία	Italy	50.3	20.7	386.8	411.9	53.5	7.7
	Ην. Βασίλειο	UK	47.9	24.5	375.3	510.6	65.2	7.8
	Λοιπές	Others	352.9	99.0	1,761.2	-	-	-
	Σύνολο	**Total**	**716.6**	**217.8**	**3,621.9**	**304.0**	**60.1**	**5.1**
	% επί του συνόλου	**as a percentage of the total**	**2.5%**	**1.7%**	**1.9%**			

Figure 10: Tourism in Epirus Region, Bank of Greece

According to the assessment of the tourist balance by the Bank of Greece, Epirus received, in 2017 (the whole year), about twice the tourists of each population: 713,400 visitors, who stayed 3.643,200 nights in total. In terms of revenue, € 216.4 million remained in Epirus, numbers considerably high showing therefore a significant economic movement in the area.

The Region of Epirus can accommodate the above sizes of tourists, but it is an important gateway for tourists throughout Greece, mainly from neighbouring Italy, via the Port of Igoumenitsa.

Based on the available arrivals and departures data from / to the Italian ports (Ancona, Venice, Bari, Brindisi) to / from the Port of Igoumenitsa (see below in Figure 20 and Appendix for detailed data), according to data maintained by the Port Authority of Igoumenitsa, it appears that approximately 50% of arrivals to Greece from Italy (848,000 passengers, Figure 18) come by sea.

Month	Maritime connection	Arrivals					Departures				
		Passengers	Trucks	Buses	Cars	Motorbikes	Passengers	Trucks	Buses	Cars	Motorbikes
SEP_2012	Ancona	13.245	1.489	80	4.282	257	30.305	1.686	57	8.531	334
	Venice	3.550	212	6	1.127	147	5.988	408	6	1.698	127
	Bari	9.288	3.035	36	1.617	46	11.219	2.731	48	2.469	47
	Brindisi	10.317	1.219	8	2.391	70	15.168	1.418	7	3.828	93
AUG_2012	Ancona	40.646	1.451	139	10.606	742	52.266	1.529	85	12.678	679
	Venice	5.637	206	2	1.822	167	6.017	308	4	1.701	153
	Bari	8.308	2.133	31	3.366	164	14.884	1.532	31	3.815	149
	Brindisi	24.585	1.287	19	6.735	286	23.924	1.371	15	6.713	275
JUL_2012	Ancona	53.194	1.567	125	13.416	371	22.343	2.183	101	4.735	204
	Venice	6.346	284	2	1.825	122	4.742	508	15	1.102	78
	Bari	12.873	2.710	30	2.726	69	9.962	2.242	32	1.832	72
	Brindisi	19.892	1.854	15	5.052	131	12.450	2.042	29	2.613	105
JUN_2012	Ancona	19.814	1.458	58	6.434	311	11.326	2.080	54	2.674	289
	Venice	3.943	197	1	1.344	154	3.368	483	11	869	145
	Bari	9.338	3.006	20	1.728	109	7.920	2.406	25	1.236	93
	Brindisi	9.142	1.505	9	2.146	83	8.504	1.448	11	1.578	98
MAY_2012	Ancona	12.751	1.552	59	4.638	290	7.400	2.134	46	1.705	168
	Venice	3.660	255	12	1.406	133	2.636	542	20	570	100
	Bari	9.432	3.058	37	1.695	82	7.835	2.549	32	1.325	41
	Brindisi	6.451	1.327	3	1.481	45	5.751	1.303	10	1.075	38
APR_2012	Ancona	13.286	1.409	86	4.013	218	8.322	2.090	42	1.743	97
	Venice	2.994	190	9	1.348	61	1.912	430	6	532	6
	Bari	9.679	3.309	34	1.830	60	7.888	2.561	31	1.303	31
	Brindisi	4.700	790	7	1.246	13	4.440	858	19	831	6
MAR_2012	Ancona	8.514	1.426	68	2.508	7	5.678	2.022	57	1.082	8
	Venice	2.142	341	7	1.005	7	2.512	713	16	486	3
	Bari	8.352	3.509	25	1.540	22	8.778	2.860	32	1.595	24
	Brindisi	3.579	599	2	969	2	3.475	730	3	645	0
FEB_2012	Ancona	4.943	1.452	29	1.602	3	4.230	1.635	29	853	1
	Venice	1.422	356	2	620	1	1.501	565	5	294	0
	Bari	6.202	2.641	10	1.173	0	6.317	2.480	12	1.150	1
	Brindisi	2.633	455	0	654	0	1.894	600	0	353	0
JAN_2012	Ancona	5.873	1.409	30	2.103	3	8.352	2.018	17	2.152	2
	Venice	1.391	249	0	615	2	1.879	584	4	468	1
	Bari	6.996	2.601	7	1.598	0	9.487	2.719	12	1.993	1
	Brindisi	2.244	128	0	558	0	1.805	262	0	370	0
DEC_2011	Ancona	11.419	1.960	52	3.914	2	5.989	1.852	28	1.357	1
	Venice	1.590	312	0	824	1	2.532	552	16	673	0
	Bari	9.687	3.029	28	2.093	3	6.631	2.183	24	1.429	4
	Brindisi	6.842	919	1	1.587	0	3.656	967	6	739	1
NOV_2011	Ancona	6.466	1.556	37	2.597	12	6.972	2.096	27	1.812	9
	Venice	1.762	315	4	850	5	2.957	667	4	998	6
	Bari	7.823	2.985	12	1.595	8	7.662	2.604	12	1.587	9
	Brindisi	5.169	1.212	2	1.274	6	5.387	1.643	2	1.053	7
OCT_2011	Ancona	8.613	1.242	57	3.154	90	11.544	1.716	43	3.621	78
	Venice	2.347	259	13	955	26	4.156	535	9	1.583	48
	Bari	8.322	2.948	18	1.549	15	8.064	2.429	22	1.685	26
	Brindisi	5.645	1.233	4	1.336	15	6.491	1.401	15	1.190	35
TOTAL	**Ancona**	**198.764**	**17.971**	**820**	**59.267**	**2.306**	**174.727**	**23.041**	**586**	**42.943**	**1.870**
	Venice	**36.784**	**3.176**	**58**	**13.741**	**826**	**40.200**	**6.295**	**116**	**10.974**	**667**
	Bari	**106.300**	**34.964**	**288**	**22.510**	**578**	**106.647**	**29.296**	**313**	**21.419**	**498**
	Brindisi	**101.199**	**12.528**	**70**	**25.429**	**651**	**92.945**	**14.043**	**117**	**20.988**	**658**
TOTAL FROM/TO ITALY		**443.047**	**68.639**	**1.236**	**120.947**	**4.361**	**414.519**	**72.675**	**1.132**	**96.324**	**3.693**

Figure 11: Monthly arrivals and departures from/ to Italian ports to/ from the Port of Igoumenitsa (October 2011-September 2012), Igoumenitsa Port Authority

Specifically, in the period from October 2011 to September 2012[3], the number of passengers, cars, trucks, buses and motorbikes arriving / departing at the port of Igoumenitsa touches the values shown in the figure below (Figure 21).

[3] The time period since October of one year to September of the following year, set out a yearly timetable period of a ship.

At the same time, 2012 is the only year, according to Figure 18, which saw a decline in tourist arrivals in the country. It was therefore considered appropriate to look for data for this year as the most unfavorable, in order to clarify the sizes of tourists arriving in Greece from Italy through the port of Igoumenitsa, even during a "bad year".

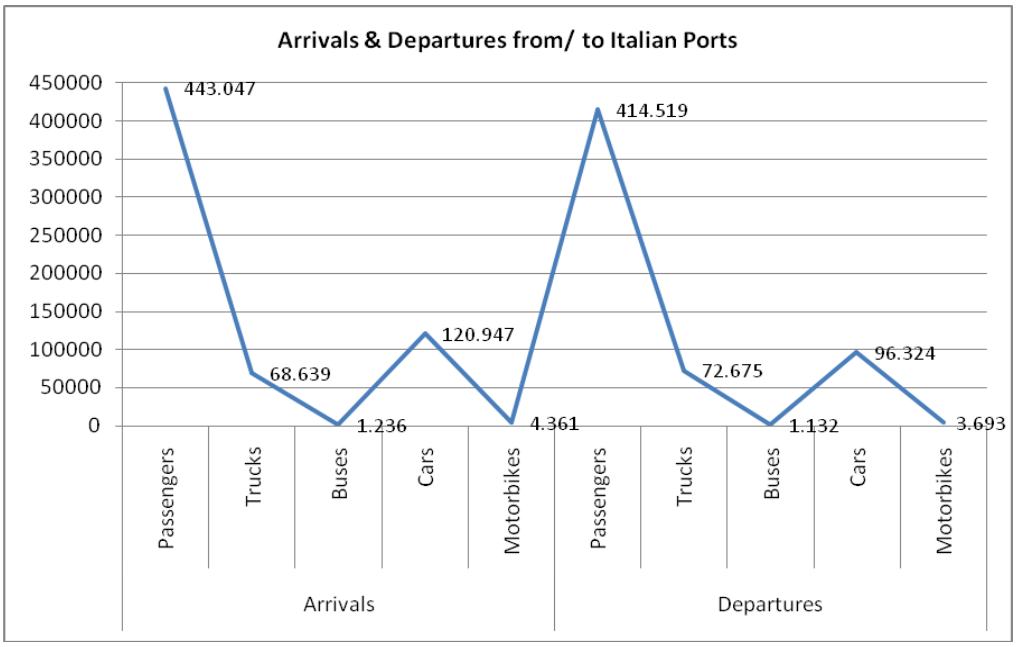


Figure 12: Arrivals and departures from/ to Italian ports to/ from the Port of Igoumenitsa, Igoumenitsa Port Authority

The picture formed by taking into account the "share" of each Italian port in the movement of passengers and vehicles between Italy and Greece through the port of Igoumenitsa is depicted in the following figure (Figure 22).

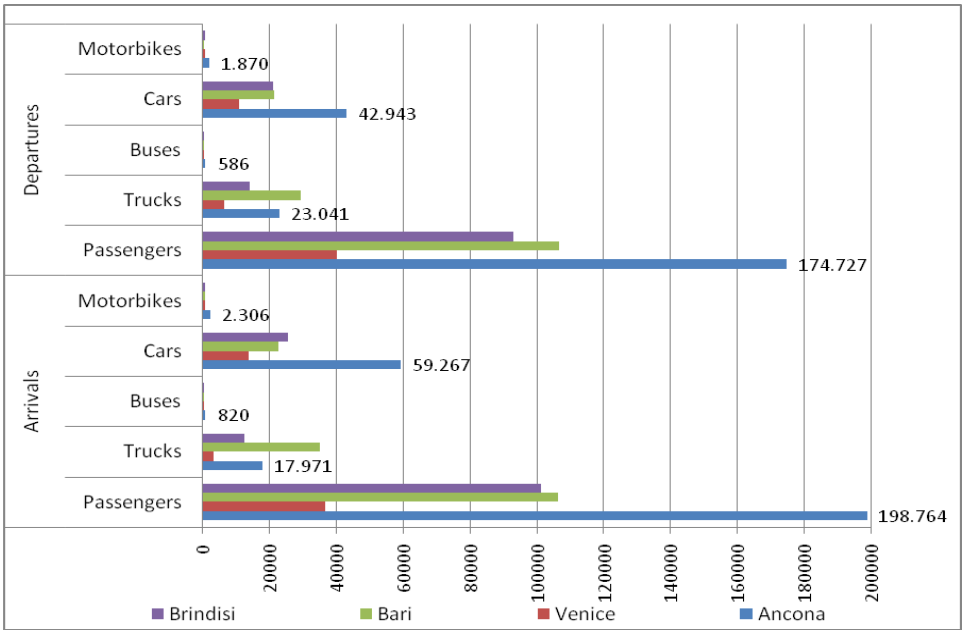


Figure 13: Arrivals and departures from/ to Italian ports to/ from the Port of Igoumenitsa per Italian port, Igoumenitsa Port Authority

The lion's share of both passengers and cars (in both directions) is owned by the port of Ancona, while freight traffic is dominated by Bari. In the bus traffic again the above two ports dominate, with Ancona significantly ahead.

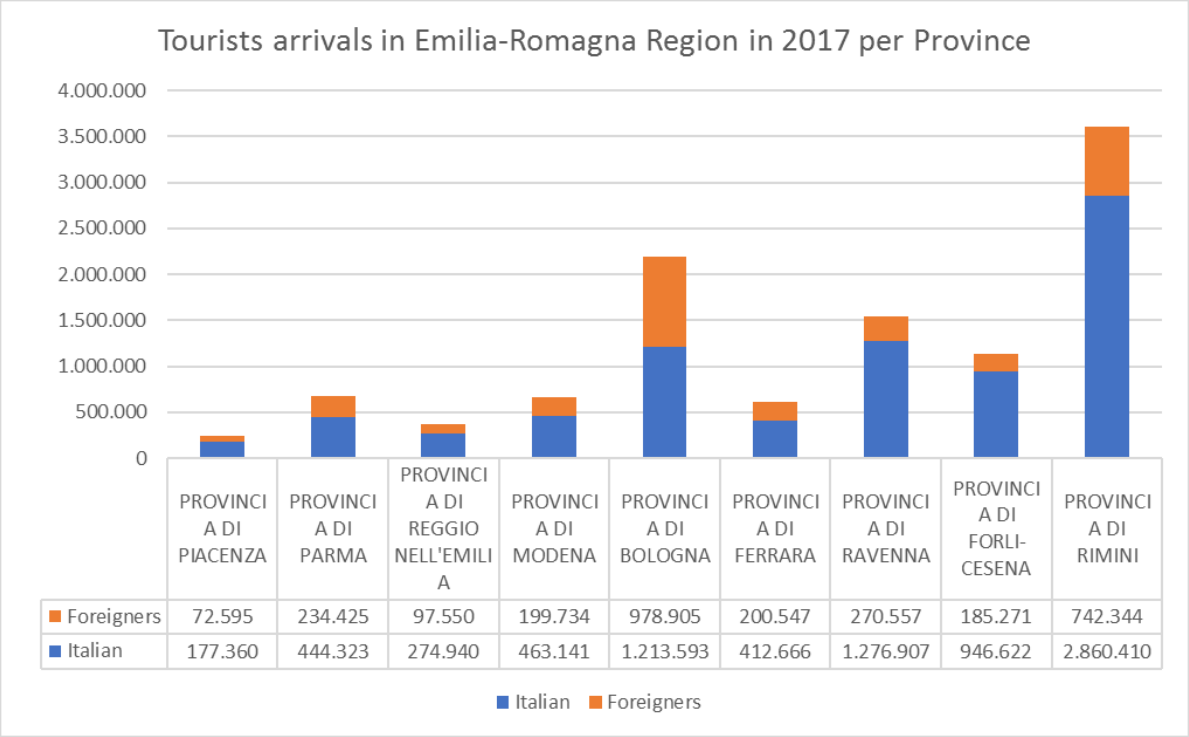
Brindisi's passengers and cars traffic to / from Igoumenitsa port is about 50% of that of Ancona.

The port of Venice has the smallest comparative share (about 10%) in this "market" for passenger and vehicle traffic in the ADRION area between the Italian ports and the port of Igoumenitsa.

3.1.2 Key figure of incoming tourism in Region Emilia Romagna, IT

General information on tourist arrivals in Emilia-Romagna Region

Total tourists arrivals in Emilia-Romagna Region in 2017 were 11.051.890 (8.069.962 Italian and 2.981.928 foreigners).



	PROVINCIA DI PIACENZA	PROVINCIA DI PARMA	PROVINCIA DI REGGIO NELL'EMILIA	PROVINCIA DI MODENA	PROVINCIA DI BOLOGNA	PROVINCIA DI FERRARA	PROVINCIA DI RAVENNA	PROVINCIA DI FORLI-CESENA	PROVINCIA DI RIMINI
Foreigners	72.595	234.425	97.550	199.734	978.905	200.547	270.557	185.271	742.344
Italian	177.360	444.323	274.940	463.141	1.213.593	412.666	1.276.907	946.622	2.860.410

Figure 14: Tourist arrivals in RER, 2017

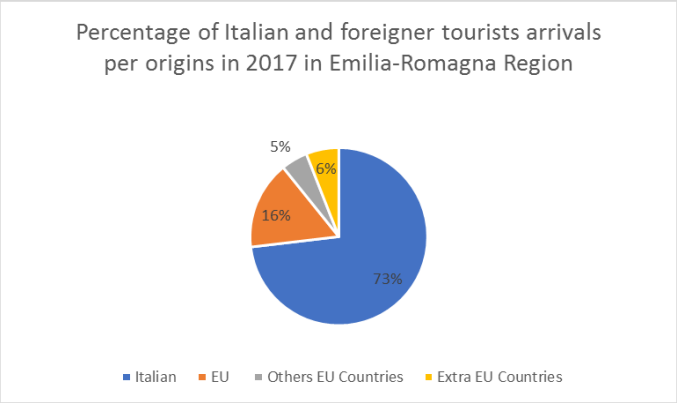
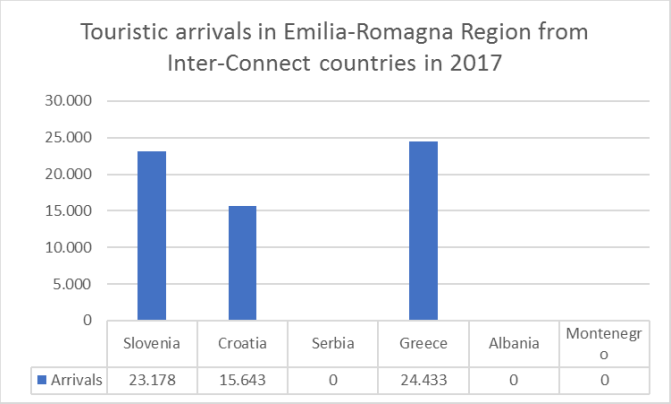


Figure 15: Percentage of domestic and foreign by origin in RER, 2017



Note: Touristic flows from Serbia, Albania and Montenegro were not calculated as they are less than 1000 tourists.

Figure 16: Tourist arrivals by Inter-Connect country, 2017

Aggregated flows from the rest Inter-Connect countries are relatively low (2%).

The three main Emilia-Romagna Region transport hubs/gates are:

- Ravenna port
- Airports of Bologna and
- Rimini Airport

Ravenna port main data

Anno	Numero totale	di cui crocieristi
2011	163.829	156.359
2012	106.498	100.379
2013	101.819	97.025
2014	62.028	43.887
2015	43.152	39.982
2016	48.002	45.904

Fonte: Autorità di Sistema Portuale del mare Adriatico centro-settentrionale.

Figure 17: Ravenna port passengers' flows, 2011-2016 (Total number and only cruise passengers).

Emilia-Romagna Airports

Bologna Airport "Guglielmo Marconi"

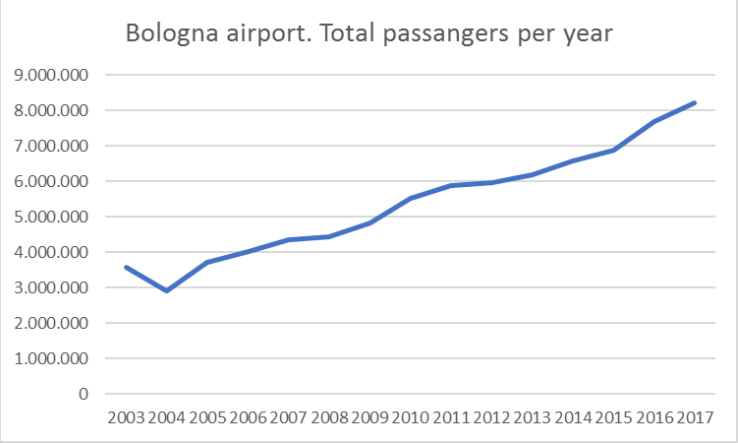
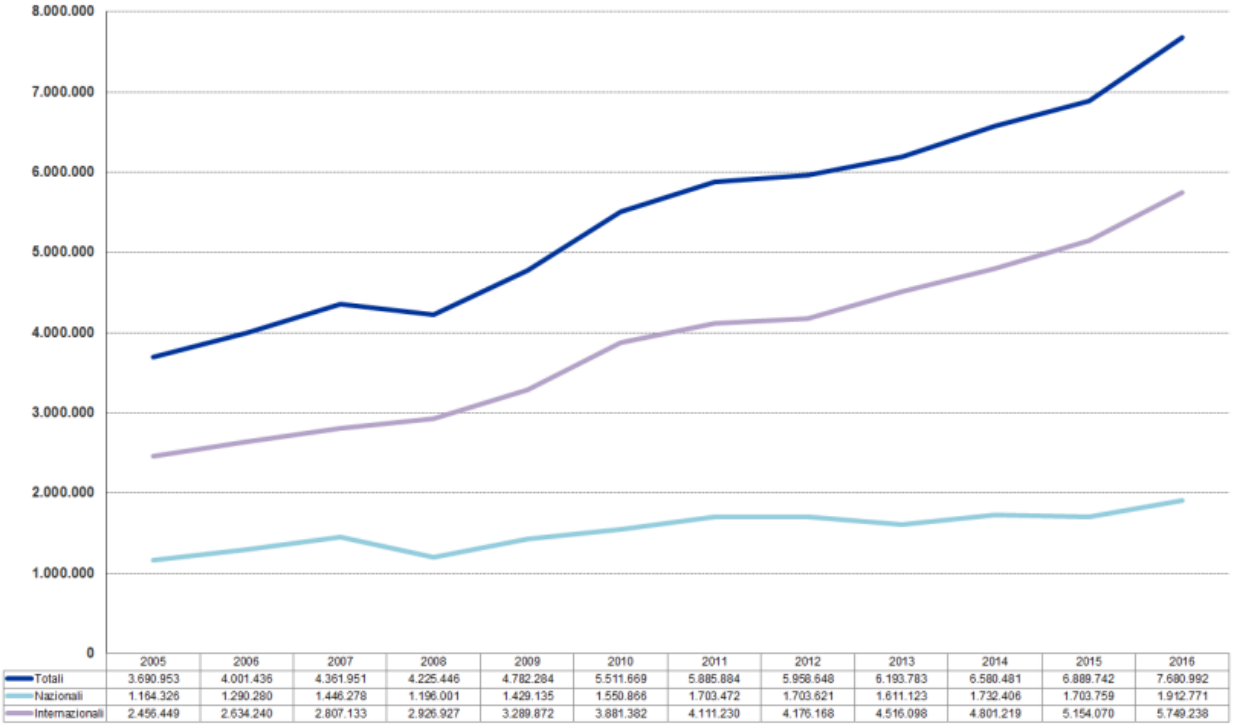


Figure 18: Bologna Airport data, 2017



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Totali	3.690.953	4.001.436	4.361.951	4.225.446	4.782.284	5.511.669	5.885.884	5.958.648	6.193.783	6.580.481	6.889.742	7.680.992
Nazionali	1.164.326	1.290.280	1.446.278	1.196.001	1.429.135	1.550.866	1.703.472	1.703.621	1.611.123	1.732.406	1.703.759	1.912.771
Internazionali	2.456.449	2.634.240	2.807.133	2.926.927	3.289.872	3.881.382	4.111.230	4.176.168	4.516.098	4.801.219	5.154.070	5.749.238

Figure 19: Bologna airport. Share of national and international passengers (2005-2016)

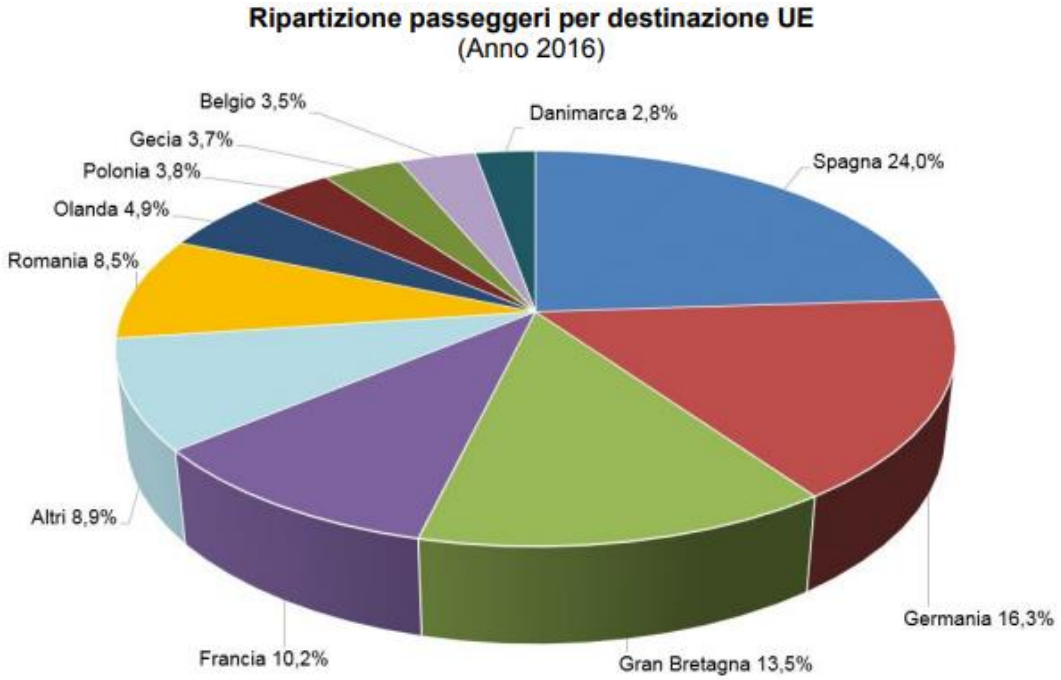


Figure 20: Bologna airport. Quota of passengers per EU destinations. [Source: https://mobilita.regione.emilia-romagna.it/Pubblicazioni/monitoraggio/monitoraggio-2017]

Rimini Airport "Federico Fellini"

Figure 21: Rimini Airport "Federico Fellini" data, 2017

The port of Ravenna is the main port of Emilia-Romagna, a port that has been appointed by the European Commission as "Core port" of the TEN-T Networks. It is a port serving passenger and cruise passengers (medium intensity) while being the biggest marinas of the Adriatic Sea. From the other side, also significant passengers' flows are served via Bologna airport, an airport following a good upward trend.

3.1.3 Key figure of incoming tourism in Region Friuli–Venezia Giulia, IT

Some key numbers for tourists arrivals in FVG region are:

- Tourist Arrivals (2017): 2.4 Millions
- Main destination (2016): sea (61%), main cities 1.4 mln, mountain (0.88 MLN)

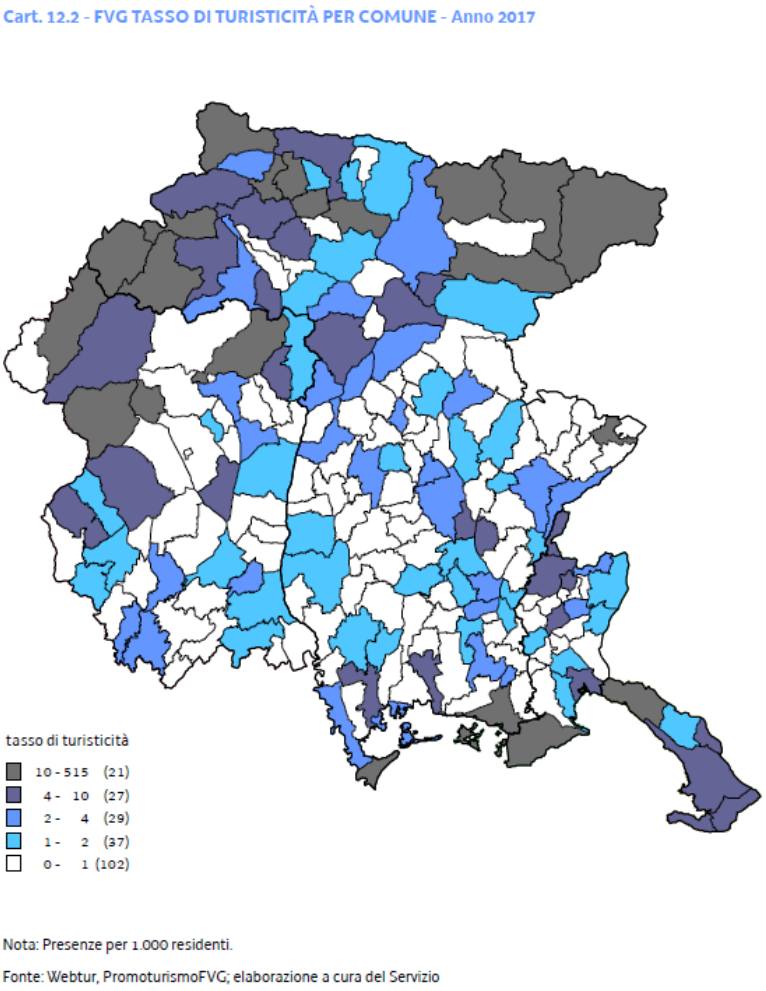


Figure 22: Tourists arrivals in FVG region

Tav. 12.10 - FVG ARRIVI E PRESENZE DEI TURISTI STRANIERI PER AREA GEOGRAFICA DI PROVENIENZA - Anno 2017

AREE GEOGRAFICHE DI PROVENIENZA	ARRIVI		PRESENZE		PERMANENZA MEDIA
	N	%	N	%	(gg.)
Europa	**1.197.683**	**93,3**	**4.689.399**	**94,4**	**3,9**
Austria	459.086	35,8	1.581.196	31,8	3,4
Germania	232.004	18,1	1.173.740	23,6	5,1
Repubblica Ceca	48.769	3,8	245.688	4,9	5,0
Ungheria	54.764	4,3	232.631	4,7	4,2
Paesi Bassi	30.228	2,4	174.661	3,5	5,8
Slovacchia	28.887	2,3	158.820	3,2	5,5
Polonia	52.774	4,1	158.109	3,2	3,0
Svizzera	31.885	2,5	117.088	2,4	3,7
Russia	28.497	2,2	113.518	2,3	4,0
Francia	30.401	2,4	98.909	2,0	3,3
Romania	21.258	1,7	88.501	1,8	4,2
Danimarca	10.616	0,8	67.203	1,4	6,3
Paesi extra-Europei di cui	**85.734**	**6,7**	**275.661**	**5,6**	**3,2**
Stati Uniti	27.996	2,2	94.496	1,9	3,4
Australia	6.030	0,5	18.605	0,4	3,1
Cina	7.999	0,6	17.246	0,3	2,2
Canada	5.023	0,4	14.578	0,3	2,9
Brasile	3.803	0,3	13.156	0,3	3,5
TOTALE turisti stranieri	**1.283.417**	**100,0**	**4.965.060**	**100,0**	**3,9**

Fonte: WebTur, Promoturismo FVG

Figure 23: Arrivals in FVG by original country

Tourists from the remaining Inter-Connect countries to FVG Region are very low.

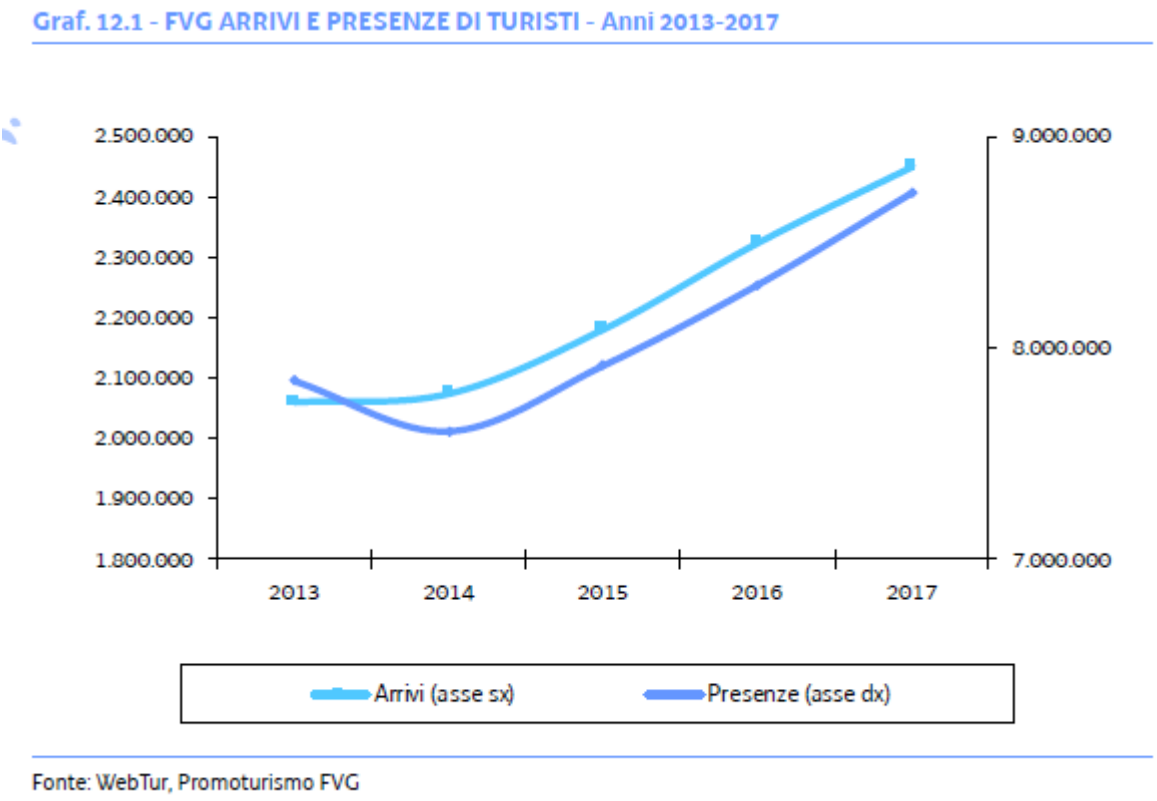


Figure 24: Arrivals and accommodation establishment in FVG (Years 2012-2017)

3.1.1 Key figure of incoming tourism in Croatia, Zagreb and coastal areas

Figure 25 presents the number of tourist arrivals at accommodation establishments in Croatia from 2006 to 2017. There were around 17.4 million arrivals at accommodation establishments in Croatia in 2017, representing an increase since the previous year [https://www.statista.com].

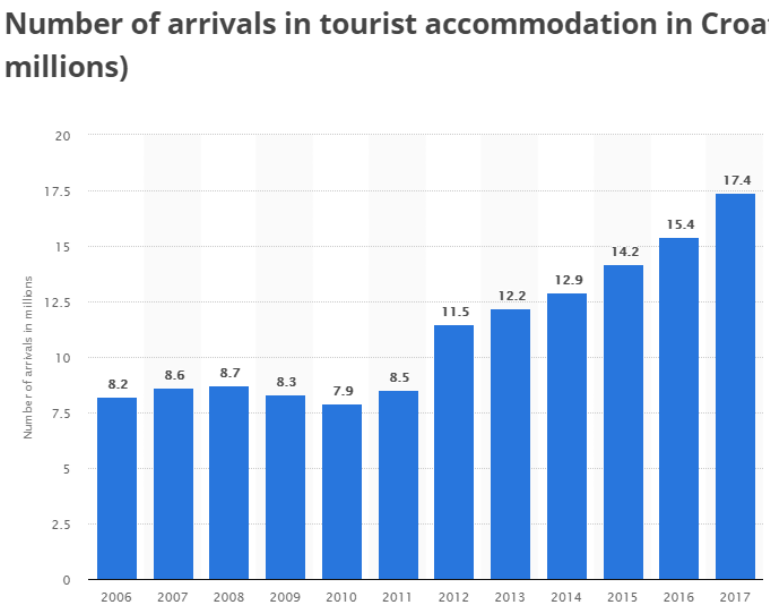
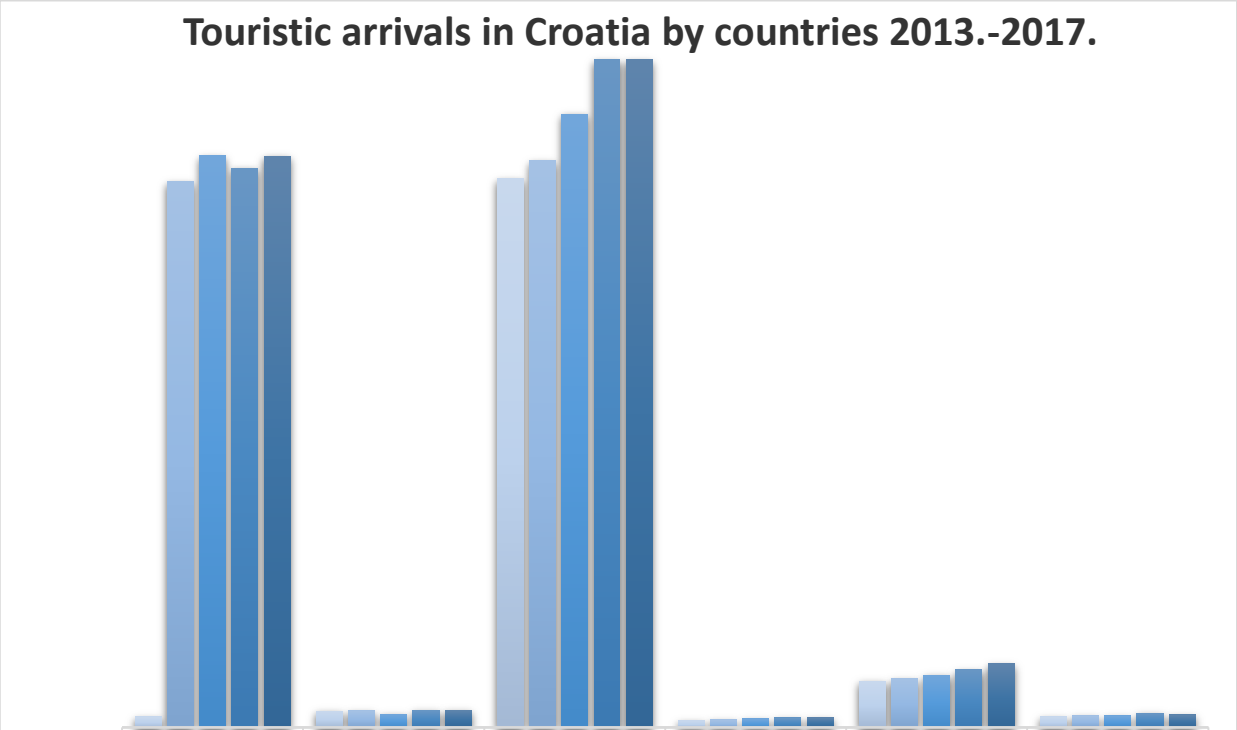


Figure 25: Touristic arrivals in Croatia from 2006 to 2017 (mill.)

Croatia seems to be among the Inter-Connect countries that attract large flows from inside the ADRION area (15% of total arrivals come from the rest Inter-Connect countries).



	Italy	Greece	Slovenia	Montenegro	Serbia	Albania
2013	20489	31572	1066610	13472	89768	20489
2014	1060912	32246	1101552	14619	94085	22496
2015	1111428	25036	1191998	16519	101397	22377
2016	1086584	33473	1297760	18381	111793	27309
2017	1110219	33521	1297681	19368	122881	24020

Figure 26: Touristic arrivals in Croatia by countries

Dalmatia (Split, Zadar, Dubrovnik), Istria and Kvarner are the top choices of tourists.

3.1.2 Key figure of incoming tourism in Slovenia, Ljubljana and coastal areas

Main figures for Slovenia Tourism are presented in the figures below:

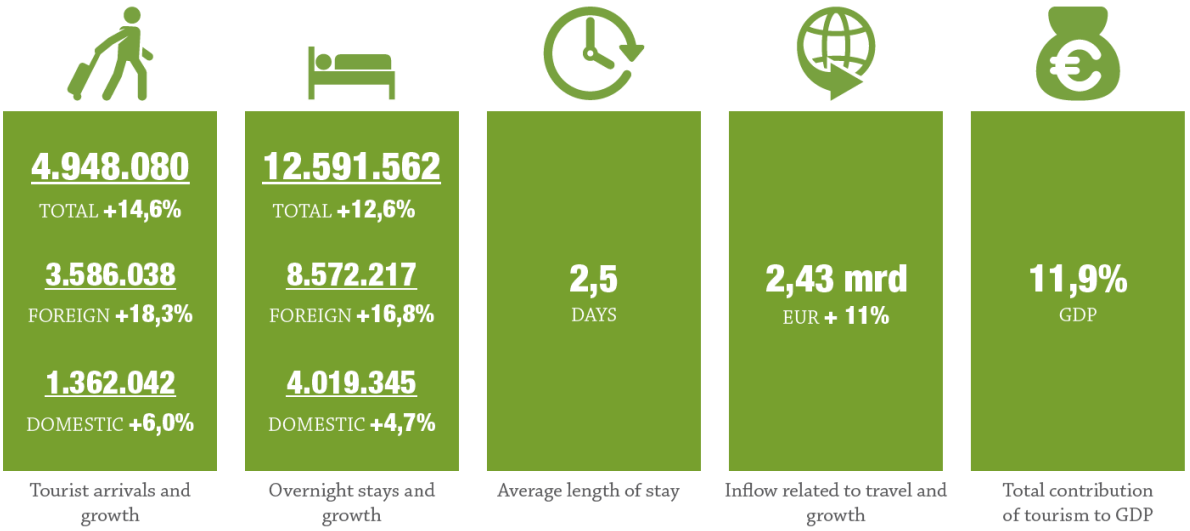


Figure 27: Tourism in Slovenia, 2017

Municipalities with the highest number of overnight stays

1	Piran	1.649.251
2	Ljubljana	1.548.487
3	Bled	907.419

Source: WTTC, 2018

Countries with the highest number of overnight stays and growth 2017/2016

Italy	1.212.427	+5,9%
Germany	1.037.225	26,4%
Austria	925.353	+10,9%
Netherlands	433.201	+35,3%
Croatia	392.801	11,6%

Source: SURS, 2018; Banka Slovenije, 2018

Figure 28: Basic tourism data for Slovenia, 2017

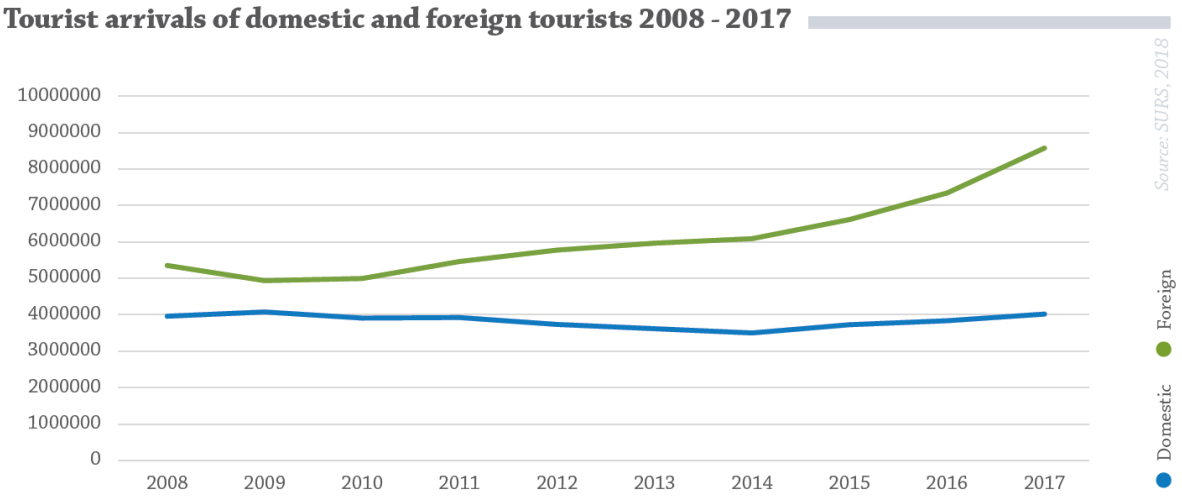


Figure 29: Tourist arrivals in Slovenia, 2017

Country	Tourist arrivals 2017	Share (%)	Index 2017/2016	Overnight stays	Share (%)	Index 2017/2016
from Austria	**351.435**	**9,80**	**112,94**	**925.353**	**10,79**	**110,91**
from Belgium	82.007	2,29	128,69	242.354	2,83	127,76
from Bulgaria	32.327	0,90	93,10	50.382	0,59	95,96
from Bosnia and Herzegovina	50.342	1,40	116,54	115.392	1,35	121,01
from Cyprus	1.426	0,04	128,70	4.413	0,05	115,10
from Chech Republic	117.132	3,27	127,88	289.424	3,38	125,64
from Moontenegro	10.818	0,30	109,51	23.964	0,28	106,78
from Denmark	20.037	0,56	114,48	59.281	0,69	107,26
from Estonia	4.308	0,12	113,67	9.301	0,11	103,90
from Finland	19.076	0,53	110,06	48.419	0,56	105,77
from France	**105.134**	**2,93**	**115,28**	**227.776**	**2,66**	**116,71**
from Greece	11.120	0,00	105,26	22.898	0,27	105,75
from Croatia	175.006	4,88	114,40	392.801	4,58	111,58
from Ireland	14.430	0,40	104,61	37.487	0,44	106,53
from Iceland	3.057	0,09	122,43	10.068	0,12	124,67
from Italy	**560.332**	**15,63**	**106,98**	**1.212.427**	**14,14**	**105,93**
from Latvia	6.197	0,17	102,79	13.849	0,16	104,79
from Lithuania	6.186	0,17	113,65	13.763	0,16	120,31
from Luxembourg	3.021	0,08	147,29	7.290	0,09	149,82
from Hungary	124.255	3,46	122,81	316.811	3,70	121,22
from Macedonia	18.387	0,51	105,68	38.352	0,45	106,99
from Malta	5.975	0,17	120,78	27.121	0,32	124,28
from Germany	**392.562**	**10,95**	**127,70**	**1.037.225**	**12,10**	**126,39**
from Netherlands	131.939	3,68	138,17	433.201	5,05	135,28
from Norway	11.608	0,32	113,36	29.008	0,34	106,12
from Poland	93.646	2,61	127,48	204.179	2,38	125,87
from Portugal	10.788	0,30	124,29	23.298	0,27	123,03
from Romania	40.869	1,14	112,65	86.831	1,01	117,65
from Russian Federation	**55.508**	**1,55**	**127,29**	**282.383**	**3,29**	**134,27**
from Slovakia	44.753	1,25	124,25	105.775	1,23	119,27
from Serbia	112.251	3,13	109,14	277.644	3,24	111,46
from Spain	58.399	1,63	129,14	126.717	1,48	129,66
from Sweden	27.598	0,77	125,34	62.117	0,72	124,37
from Switzerland	55.302	1,54	117,59	117.834	1,37	115,44
from Turkey	29.338	0,82	130,86	51.901	0,61	128,85
from Ukraine	28.485	0,79	105,39	81.868	0,96	109,79
from United Kingdom	**129.092**	**3,60**	**117,98**	**369.200**	**4,31**	**115,86**
from other European countries	22.346	0,62	109,75	55.058	0,64	109,26
from South Africa	3.295	0,09	146,31	7.527	0,09	141,51
from other African countries	6.012	0,17	108,58	17.202	0,20	88,83
from Australia	36.705	1,02	123,31	71.275	0,83	123,24
from New Zealand	6.532	0,18	115,12	12.364	0,14	105,20
from other countries of Oceania	578	0,02	128,73	1.078	0,01	133,58
from Israel	60.350	1,68	90,00	196.722	2,29	83,19
from Japan	31.857	0,89	108,09	51.348	0,60	110,79
from China	64.599	1,80	142,53	89.080	1,04	136,97
from Korea (Republic of)	149.120	4,16	131,25	163.289	1,90	130,54
from other Asian countries	108.294	3,02	141,49	203.894	2,38	131,19
from Brazil	11.661	0,33	121,44	24.165	0,28	125,03
from other countries of South and Middle America	17.174	0,48	112,57	34.068	0,40	108,34
from Canada	21.453	0,60	125,46	46.287	0,54	126,47
from United States	101.905	2,84	125,55	220.740	2,58	120,82
from other countries of North America	11	0,00	157,14	13	0,00	76,47

Figure 30: Tourists in Slovenia by origin country, 2017

Tourism industry is highly active in Slovenia presenting almost 3.5mill. arrivals of foreign tourists during 2017. The coastal areas (Piran) and the inland part of the country with Ljubljana and its catchment area are the main tourists' attractors. Furthermore, the tourists flows from inside ADRION area are high (26%, 2017 data) – tourists from Italy consists a considerable percentage (16%).

3.1.3 Key figure of incoming tourism in Bar and Montenegro

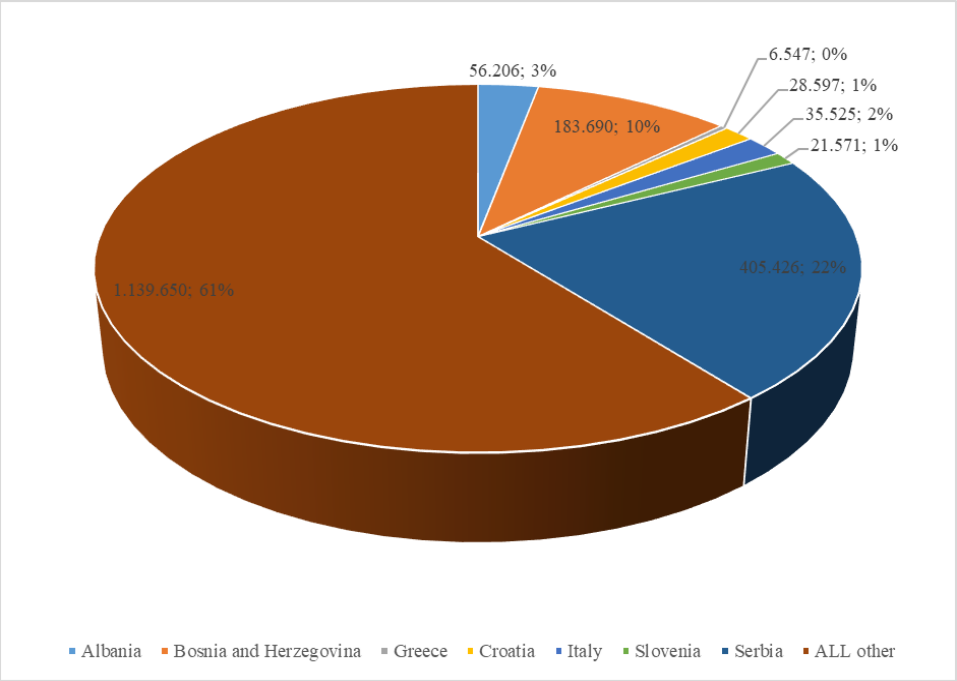


Figure 31: Arrivals and overnight stays of foreign tourists in Montenegro by country of residence, total 2017

39% of the total arrivals in ME comes from the rest ADRION countries with Serbian tourists keeping the 22% of the total arrivals.

According to "Montenegro Tourism Development Strategy to 2020", *the growth rates* (in Montenegro) *in the tourism sector have been remarkable since 2003 […]. By 2018 (the World Travel and Tourism Council (WTTC)) forecasts further growth in tourist GDP of 5.7% a year as compared with an average of 2.8% in the EU, putting Montenegro among top of the 176 included in the comparison. It attributes this upswing and the favourable economic indicators to the development efforts over recent years, the conducive climate for investment, the effective marketing of Montenegro as a previously almost unknown destination, the privatization and improvement of hotel, services, the reduction in corporate tax and inter-ministerial and international cooperation.*

3.1.4 Key figure of incoming tourism in Durres and Albania

Albania, presenting 265 miles of seaside in a prime location and being at a close vicinity to Ionian Sea and Greek islands and at just 60miles from Puglia (IT), recently got in an upward evolution regarding

tourism sector (increased by 4.5% from the previous year). At the moment, from ADRION countries, Greece, Montenegro and Italy represent the main pools from where tourists are arriving.

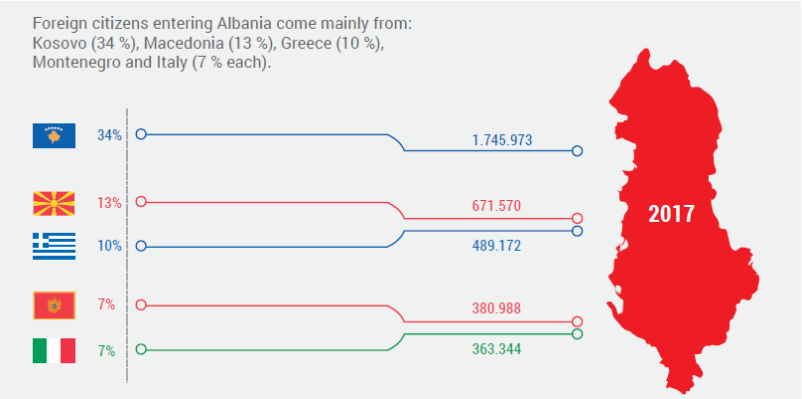


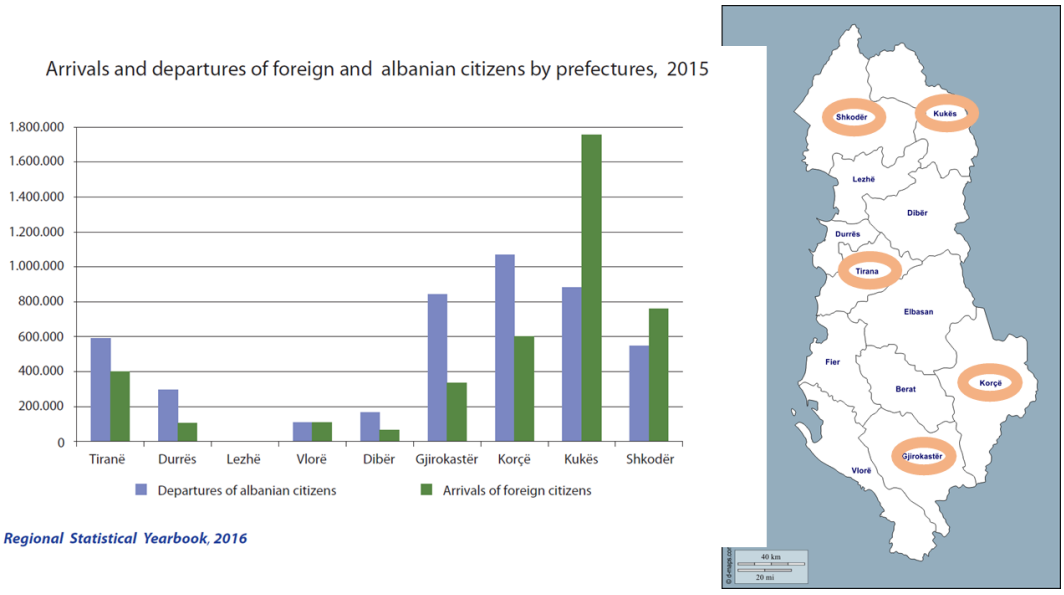
Figure 32: Albania tourism facts, 2017

ARRIVALS OF FOREIGN CITIZENS BY MODE OF TRAVEL IN THOUSAND

No.	Description	2013	2014	2015	2016	2017
	ARRIVALS OF FOREIGN CITIZENS TOTAL I+II+III	3.256	3.673	4.131	4.736	5.118
I	BY AIR	314	337	401	457	578
II	BY SEA	187	202	215	279	396
III	BY LAND	2.755	3.134	3.515	3.999	4.144

Source: Ministry of Internal Affairs

Figure 33: Modal split of tourists arrivals in Albania, 2017



Regional Statistical Yearbook, 2016

Figure 34: Arrivals and departures of tourists by Albanian prefecture, 2017

Cross border prefectures and the capital city of Tirana are the main tourist poles in Albania.

3.1.5 Key figure of incoming tourism in Belgrade and Serbia

According to the Statistical Yearbook, in Serbia, *when compared to 2016, the total number of tourists in 2017 amounted to 3.086 thousand, while the number of domestic tourists was 1.589 thousand (7.9% increase), and the number of foreign tourists who visited the country amounted to 1.497 thousand, presenting an increase of 16.8%. Out of the total number of tourists' overnight stays (8 325 thousand), 26.8% (2 228 thousand) were recorded in spas and 25.0% (2079 thousand) in mountain resorts. The structure of domestic tourists' nights shows that 38.0% was spent in spas (1 957 thousand) and 34.1% (1 757 thousand) in mountain resorts, out of the total number of domestic tourists' overnight stays (5 150 thousand). The structure of foreign tourists' overnight stays shows that there were 53.3% (1 692 thousand) tourists' nights spent in Grad Beograd, 7.3% (231 thousand) in Grad Novi Sad, 8.5% (271 thousand) in spas and 10.1% (321 thousand) in mountain resorts, out of the total number of foreign tourists' overnight stays (3 175).*

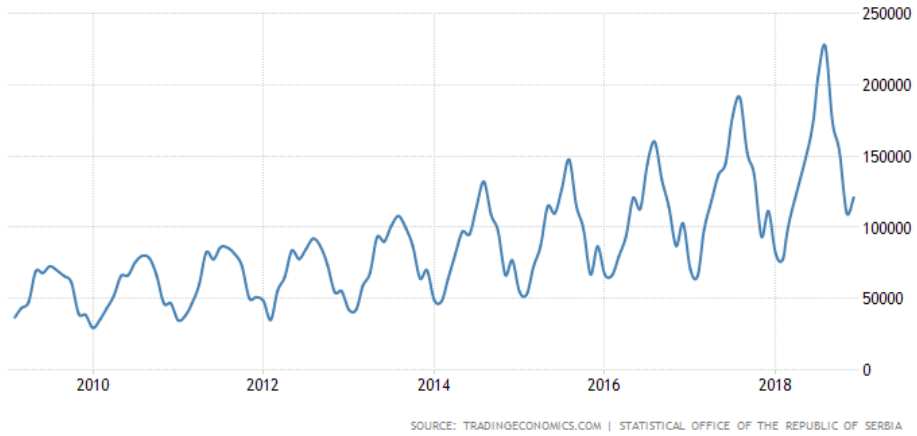


Figure 35: Arrivals 2010-2018 in Serbia

The largest number of foreign tourists who visited the Republic of Serbia in 2017 were tourists from Bosnia and Herzegovina (108 thousand arrivals, 235 thousand overnight stays), Turkey (99 thousand arrivals, 163 thousand overnight stays), Bulgaria (91 thousand arrivals, 149 thousand overnight stays), Croatia (83 thousand arrivals, 153 thousand overnight stays) and Montenegro (79 thousand arrivals, 198 thousand overnight stays).

3.1.6 Comparative picture

Pairs of Inter-Connect countries (with direction) that present significant tourist flows (comparatively to the rest) are:

- From Greece to:
  - Italy (1% of total number of tourists arriving in Italy)
  - Albania (10%)
  - Serbia (4.5%)

- From Italy to:
  - Greece (4%)
  - Croatia (6%)
  - Slovenia (11%)
  - Albania (7%)
  - Montenegro (2%)
  - Serbia (3%)
- From Croatia to:
  - Slovenia (3.5%)
  - Montenegro (1.5%)
  - Serbia (5.5%)
- From Slovenia to:
  - Croatia (7%)
  - Serbia (5%)
- From Albania to:
  - Montenegro (3%)
- From Montenegro to:
  - Albania (7%)
  - Serbia (5%)
- From Serbia to:
  - Greece (2%)
  - Croatia (1%)
  - Montenegro (21%)

The percentages above as for tourists exchange among ADRION countries cannot be considered as high, mutual promoting schemes (supported of course by the respective services) could add on areas' growth.

The following table summarizes main tourist flows (at the level where data are available) compared to total population.

Table 4: Foreign tourist arrivals (for the last year available) compared to population

	Foreign Tourists (annually)	Population	
IT	58250000	60630000	96%
Region Emilia Romagna	2981928	4449000	67%
Fruili Venezia Giulia	1283417	1216853	105%
GR	27194000	10815197	251%
Region of Epirus	713400	336856	212%
SL	3586038	2050000	175%
Ljubljana	1548487	271937	569%
Piran	1649251	3872	42594%
HR	15590000	4290000	363%
City of Zagreb	1109000	801349	138%
Coastal areas	13498000	1411935	956%

ME	1877212	620029	303%
Bar	n/a	45223	
SB	1497000	7020000	21%
Belgrade	863162	1687132	51%
AL	5118000	2900000	176%
Durres	163575	113249	144%

Croatia and coastal areas of Adriatic – Ionian in general seems to attract the majority of tourists, fact that, accompanied with the high natural and cultural heritage of the area, opens the path for the area to be promoted as a worldwide attraction pole. From the other side, investments on connectivity and tourism boost along with actions promoting sustainable development (in line with EU 2020 goals and UN Sustainable Development Goals) are imperative. Attention should be paid also in demand seasonality, e.g. for coastal areas that flows are concentrated on the summer period, additional efforts should be given towards mitigating and eliminating mobility and tourism externalities.

3.2Cases based analysis – touristic flows from case to case

Origin – Destination data at NUTS3 to NUTS3 levels is not an easy mission; it requires extended real surveys at borders, hotels and accommodation places, transport terminals asking travellers not just origin country (country of residence) but also going deeper and asking city of residence and the destination at NUTS3 level too. Furthermore, city of residence is something either not asked by the transport service providers or belongs to the very sensitive area of personal data.

The available database covering the needs of our research was TRANSTOOLS. However, since there are some limitations applicable to the currently publicly available version of TRANSTOOLS (e.g. unavailability to operate ArcGIS 10), the team searched the possibility to use ASTRA EC model (http://www.astra-model.eu/astra-ec.htm). ASTRA – EC model is developed based on System Dynamic Methodology that do not require fixed generation and fixed OD matrix that we are searching for. For the above reasons, Inter-Connect team used the available databases of TRANSTOOLS.

Based on TRANS-TOOLS ("TOOLS for TRansport Forecasting ANd Scenario testing") model v.1 , the European transport network model covering both passengers and freight, the following tables per mode are constructed (clustering of numbers – OD, since numbers can be misleading);

Table 5: Road travellers from case c.a. to case c.a. (per year), *Source: TRANS-TOOLs v.1*

	Igoumenitsa c.a.	*Bologna c.a.*	*Trieste c.a.*	*Zagreb c.a.*	*Ljubljana c.a.*	*Bar c.a.*	*Durres c.a.*	*Belgrade c.a.*
Igoumenitsa c.a.								
Bologna c.a.								
Trieste c.a.								
Zagreb c.a.								
Ljubljana c.a.								
Bar c.a.								
Durres c.a.								
Belgrade c.a.								

Table 6: Air travellers from case c.a. to case c.a. (per year), *Source: TRANS-TOOLs v.1*

	Igoumenitsa c.a.	*Bologna c.a.*	*Trieste c.a.*	*Zagreb c.a.*	*Ljubljana c.a.*	*Bar c.a.*	*Durres c.a.*	*Belgrade c.a.*
Igoumenitsa c.a.								
Bologna c.a.								
Trieste c.a.								
Zagreb c.a.								
Ljubljana c.a.								
Bar c.a.								
Durres c.a.								
Belgrade c.a.								

Table 7: Rail travellers from case c.a. to case c.a. (per year), *Source: TRANS-TOOLs v.1*

	Igoumenitsa c.a.	Bologna c.a.	Trieste c.a.	Zagreb c.a.	Ljubljana c.a.	Bar c.a.	Durres c.a.	Belgrade c.a.
Igoumenitsa c.a.								
Bologna c.a.								
Trieste c.a.								
Zagreb c.a.								
Ljubljana c.a.								
Bar c.a.								
Durres c.a.								
Belgrade c.a.								

Scale

larger				limited/ inexisting	not applicable for the current analysis

In transtools, maritime services in Adriatic Ionian are considered as part of the Road matrices.

The above figures, given the limitations and estimations used for a transport model development, can only give a very generic picture for Inter-Connect cases' connectivity; what can be elicited is that the pair Trieste – Ljubljana presents a dynamic – road however seems as dominant also in this connection where rail also serves it effectively. Rail is selected by travellers in the case of high speed services, in intra-country trips (Bologna – Trieste high speed connections) and for direct (nearby countries) connections (Belgrade – Ljubljana in Slovenia and Belgrade to Podgorica and Bar in Montenegro).

Without saying, for the cases of Italy, Greece, Slovenia and Croatia road transportation is the main preference of travellers inside ADRION cities. Significant point is that for Belgrade, Durres and Bar where further road investments are necessary in order to complement the network, air transportation is selected by the majority of travellers.

4. Key messages

Basic points derived from the work on the current deliverable and from a more general understanding on the area can be found in the following subchapters:

4.1 Rail transportation related:

- The 1st cluster of Rail4See project as described in the respective report (5.3b "Report on pilots for optimal transnational rail services in SEE") regarding strong rail connectivity is also supported via Inter-Connect project – *Bologna [, Venice], Trieste, Ljubljana, Zagreb (called also Northern Cluster) gathers the hubs northern Adriatic area, which are close each to another with strong economy and social ties between Italian hubs and also between capitals of Slovenia and Croatia.* Belgrade remains the main rail hub connecting the Northern and Southern countries of Inter-Connect project.

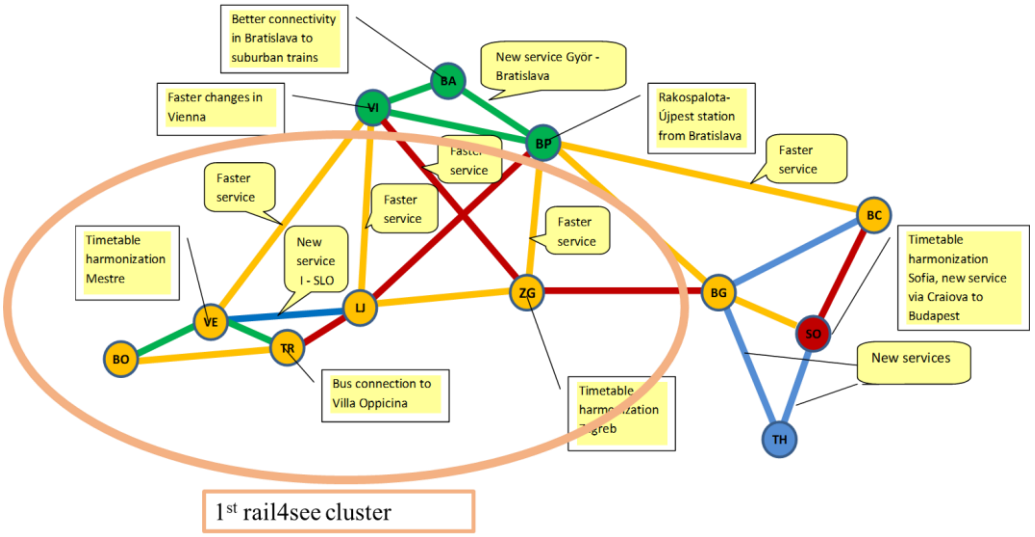


Figure 36: Rail clusters, Rail4See project[4]

- There is a low level of rail services for Eastern Europe and Western Balkans: this commercial choice is mainly caused by the strong competition with long distance flights consequently long distance trains (national and international) have been cancelled. Additionally there is a concrete difficulty of establishing partnerships and commercial agreements with foreign companies

[4] *(existing connections are these coloured in green) - Changes from 2014 as regards the rail connections;* ***Trieste is directly connected to Ljubljana***

- Technical difficulties due to the non-interoperability seems to be a major problem for rail boost in ADRION area other than the positioning of countries around a sea that can be an obstacle to rail promotion. However, political will, consistency and continuity remains the main challenge in the wider area. Missing rail links completion, commercial oriented railway companies, fair infrastructure charging systems, fully liberalization and stable regulatory frame can guarantee rail traffic increase (The World Bank, "Railway Reform in South East Europe and Turkey On the Right Track?").
- As depicted in Figure 37 and Figure 38, there is still a large percentage of investments to be completed both as regards the TEN-T conventional rail core network as well as for the High Speed network (where applicable).

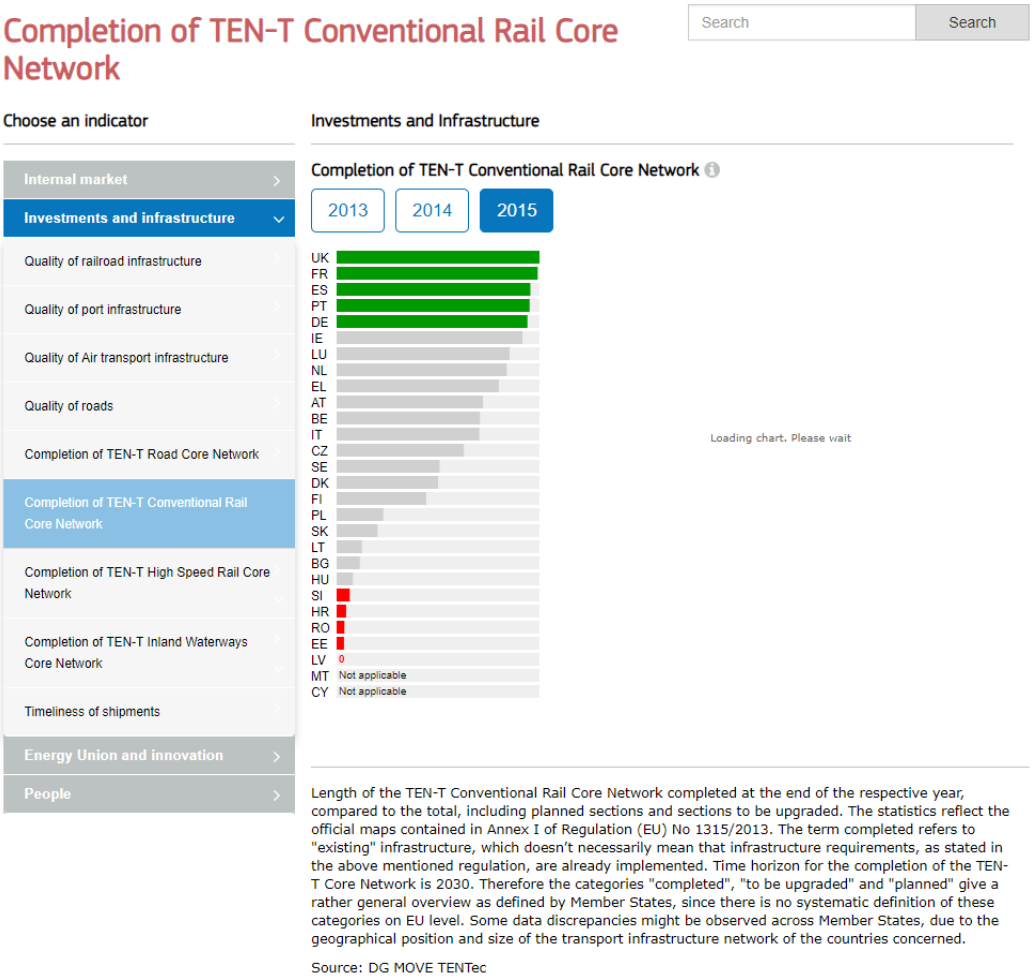


Figure 37: Conventional rail core network completion, DG MOVE TENTec

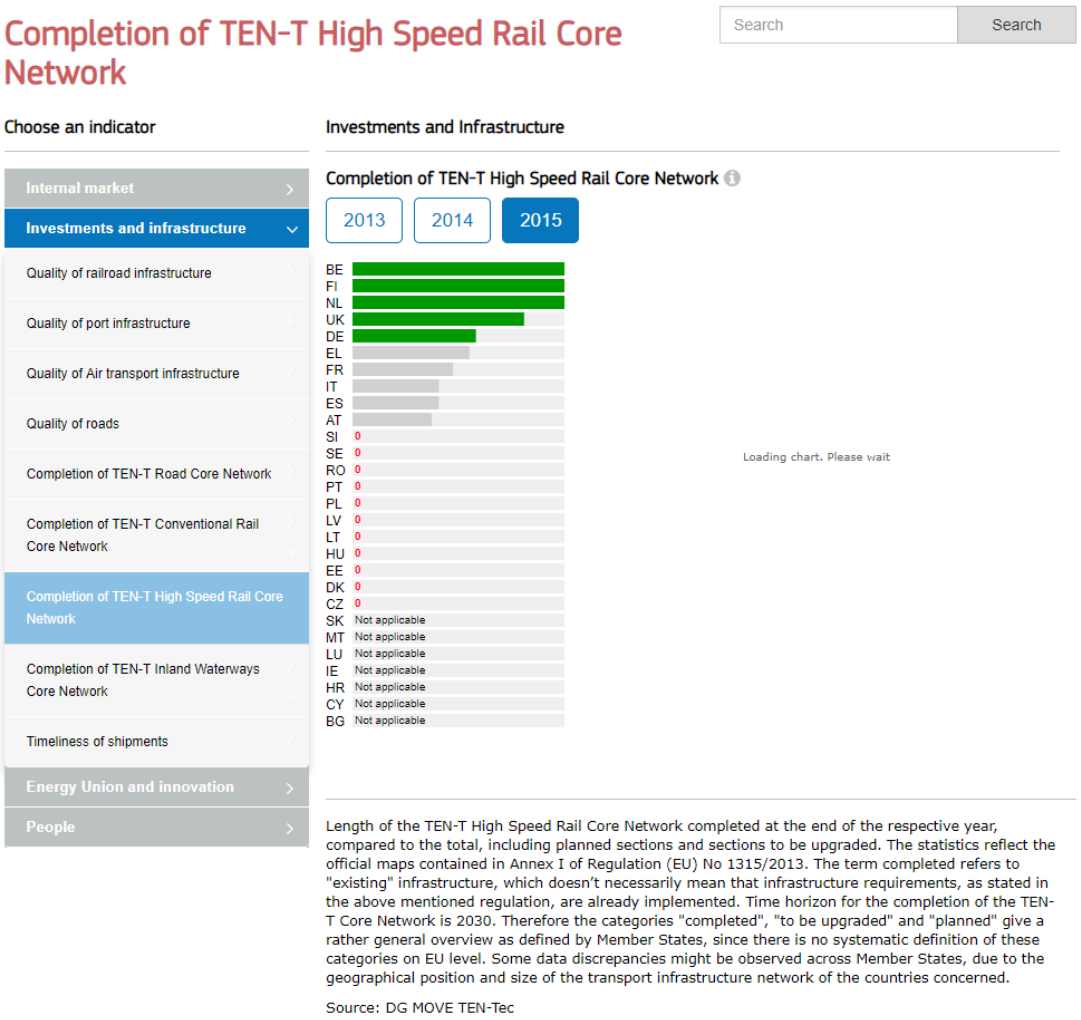


Figure 38: High speed rail core network completion, DG MOVE TENTec

4.2 Maritime transportation related:

- Maritime tourism shows an increase as depicted in Figure 39. (intensity increased on average and emerging power regions are obvious)

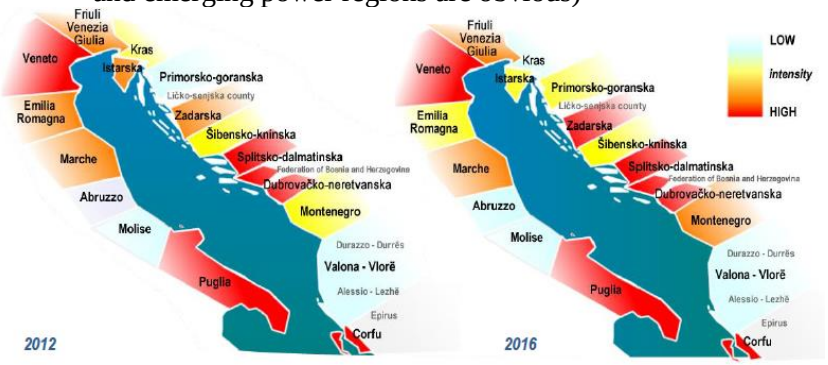
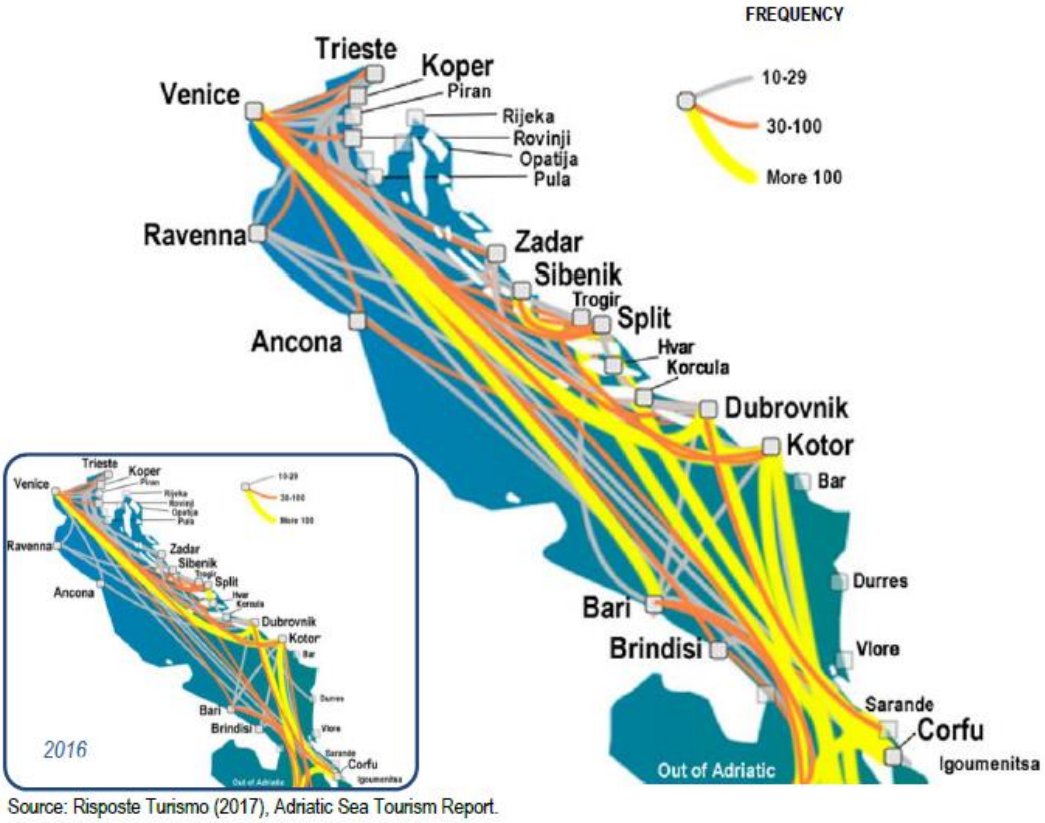


Figure 39: Maritime tourism intensity in the Adriatic regions (combination of cruise, ferry, sail and yacht tourism), 2012 and 2016.

- Cruise tourism seems to be also an opportunity for the area – supported by each long coastline and natural beauty areas. Cruise challenge should be faced at an upper level, transnational ministerial level with the involvement of multisectorial stakeholders and experts. It is an opportunity for the area not to be lost.



Source: Risposte Turismo (2017), Adriatic Sea Tourism Report.

Figure 40: Main cruise routes in the Adriatic Sea, 2017

	Cruise port	Country	Cruise traffic		Share % on total		Variation % on 2015	
			passenger movements	calls	passenger movements	calls	passenger movements	calls
1	VENICE	ITA	1,605,660	529	31.7%	14.2%	1.5%	1.5%
2	DUBROVNIK	HR	833,588	639	16.5%	17.2%	2.6%	6.0%
3	CORFU	GRE	748,916	481	14.8%	12.9%	15.7%	18.2%
4	KOTOR	MON	535,232	493	10.6%	13.3%	19.3%	20.0%
5	BARI	ITA	400,875	145	7.9%	3.9%	9.0%	-1.4%
6	SPLIT	HR	278,259	286	5.5%	7.7%	2.5%	9.6%
7	TRIESTE	ITA	145,991	61	2.9%	1.6%	8.7%	35.6%
8	ZADAR	HR	136,462	114	2.7%	3.1%	82.8%	18.8%
9	KOPER	SLO	78,923	69	1.6%	1.9%	36.3%	40.8%
10	ANCONA	ITA	54,901	34	1.1%	0.9%	39.8%	41.7%
11	RAVENNA	ITA	45,613	44	0.9%	1.2%	14.1%	29.4%
12	HVAR	HR	34,260	128	0.7%	3.4%	14.9%	-4.5%
13	SARANDE	ALB	30,783	87	0.6%	2.3%	78.6%	0.0%
14	KORČULA	HR	29,407	159	0.6%	4.3%	-30.8%	19.5%
15	ROVINJI	HR	18,172	67	0.4%	1.8%	16.5%	21.8%
16	DURRES	ALB	14,760	25	0.3%	0.7%	83.1%	108.3%
17	RIJEKA	HR	13,876	15	0.3%	0.4%	52.8%	114.3%
18	SIBENIK	HR	12,276	106	0.2%	2.9%	-30.1%	15.2%
19	BAR	MON	8,660	7	0.2%	0.2%	n.a.	n.a.
20	IGOUMENITSA	GRE	7,623	7	0.2%	0.2%	146.7%	16.7%
	Other ports		30,138	231	0.6%	6.2%	-83.2%	-6.9%
	TOTAL		5,064,375	3,727	100%	100%	5.5%	10.5%

Source: Risposte Turismo (2017), Adriatic Sea Tourism Report. Data provided to Risposte Turismo directly by cruise ports and national institutions (Croatian Bureau of Statistics, Hellenic Ports Association).

Figure 41: The main 20 cruise ports of the Adriatic and overall traffic, absolute values and percentages, 2016 and variations on 2015.

	Pax. mov.	Calls	Variation 2017 on 2016			
	2017	2017	% Pax. mov.	% Calls	Abs. Pax	Abs. Calls
Ancona	54,900	31	stable	-8.8%	stable	-3
Bar	9,270	8	7.0%	14.3%	610	1
Bari	400,000	134	-0.2%	-7.6%	-875	-11
Brindisi	105,800	40	1,907.6%	185.7%	100,530	26
Corfu	635,000	408	-15.2%	-15.2%	-113,916	-73
Dubrovnik	744,598	537	-10.7%	-16.0%	-88,990	-102
Igoumenitsa	11,986	12	57.2%	71.4%	4,363	5
Koper	71,000	60	-10.0%	-13.0%	-7,923	-9
Kotor	500,000	459	-6.6%	-6.9%	-35,232	-34
Opatija	2,688	10	-20.8%	-44.4%	-704	-8
Pula	12,000	62	118.3%	226.3%	6,502	43
Ravenna	50,000	49	9.6%	11.4%	4,387	5
Rijeka	14,000	14	0.9%	-6.7%	124	-1
Rovinj	18,000	67	stable	stable	stable	stable
Sibenik	30,000	120	144.4%	13.2%	17,724	14
Split	270,000	229	-3.0%	-19.6%	-8,259	-56
Venice	1,422,000	473	-11.4%	-10.6%	-183,660	-56
Zadar	130,000	110	-4.7%	-3.5%	-6,462	-4
18 Adriatic ports providing forecasts on passenger movements: -6.51% on 2016						

Figure 42: Cruise traffic in Adriatic, forecasts for 2017 and variations on 2016

- Long travel times of maritime transportation that is a main disincentive for travellers could be balanced by other benefits and offers to travelers (e.g. integrated touristic packages, discounts on PuT).

4.3 Ideas for a higher connectivity map in ADRION

- ADRION should take advantage of its position, in the cross road of TEN-T networks by offering advance Public Transport services for tourists (harmonized timetables, offers, integrated tickets, touristic packages, tours on historic paths and civilizations, new eco-tourism models).

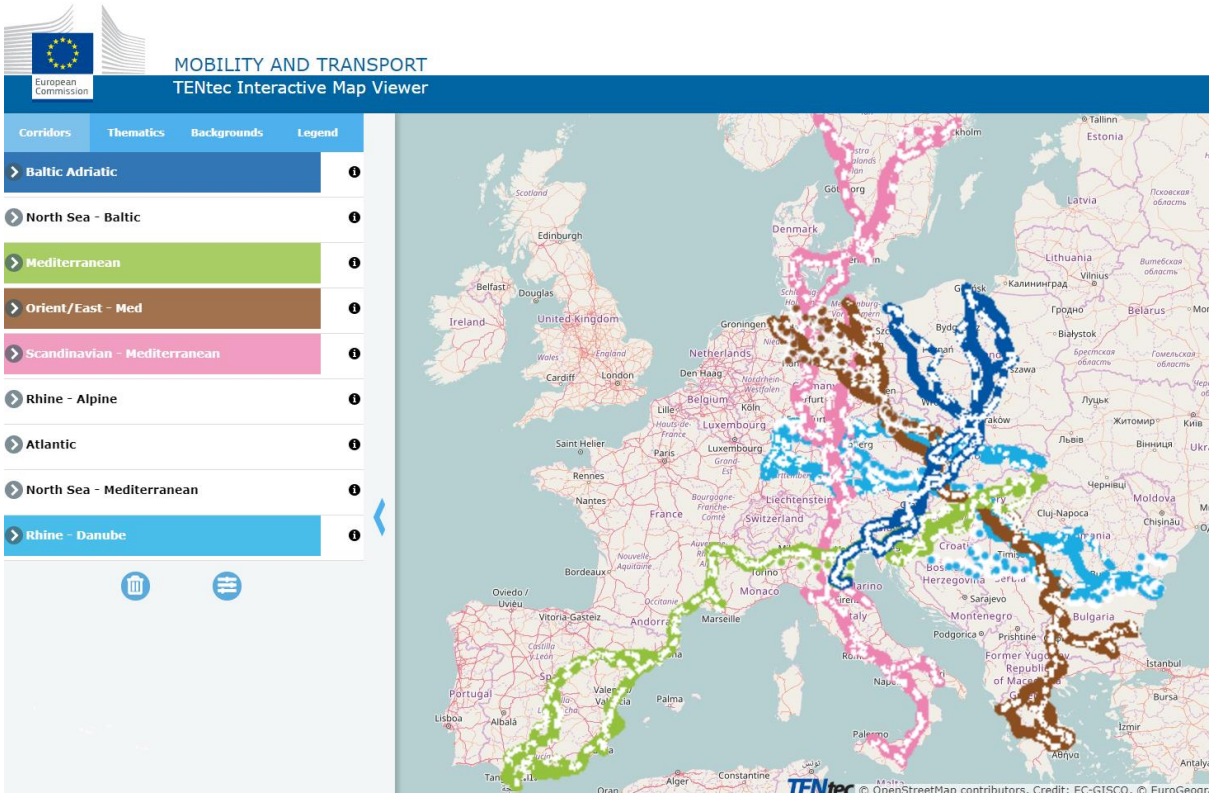


Figure 43: ADRION in the cross-road of TEN-T axis

Depending on the Western Balkan (WB) countries efforts (Serbia, Montenegro, NORTHERN MACEDONIA, Albania, Bosnia and Herzegovina and Kosovo) to meet criteria, the year 2025 is set as the deadline for EU enlargement in the Western Balkans. The extension is estimated to achieve *closer integration with the EU as well as the basis for leveraging investment in infrastructure, such as EU support through the Western Balkans Investment Framework (WBIF) and the Connecting Europe Facility (CEF).* Focusing on ADRION area and on the objectives of Inter-Connect project, the extension of the TEN-Ts will change the picture as we show it above by:

  - posing attention to short ship shipping (Durres and Bar ports to be part of the core network), bringing benefits for the region's economy as well as for the citizens daily life (travel needs, entrepreneurship, mobility)
  - involving inland waterways as part of the transport network
  - even enhancing road connectivity
  - opening the path for rail transport share increase and finally
  - entering in a new era the air transport by adding WBs airport in the Core Network Definition Airports (indicative extensions in http://europa.eu/rapid/press-release_STATEMENT-15-4826_de.htm)

- Maritime – rail intermodality options could be part of an integrated touristic package offered to travellers. Offers (discounts) at destinations for using public transport could complete the

touristic packages. Multistakeholder approach is necessary within a clear framework of role, responsibilities and benefits.

- Services financing should be assured even from the pilot phase of services.
- Since Adriatic- Ionian has started being a brand in tourism, wider cooperation schemes among private and public sectors at transnational level would help develop the foundations of a sustainable integrated transport –tourism model. The testing of touristic packages via maritime and rail modes could show the way for transformation and further investments.

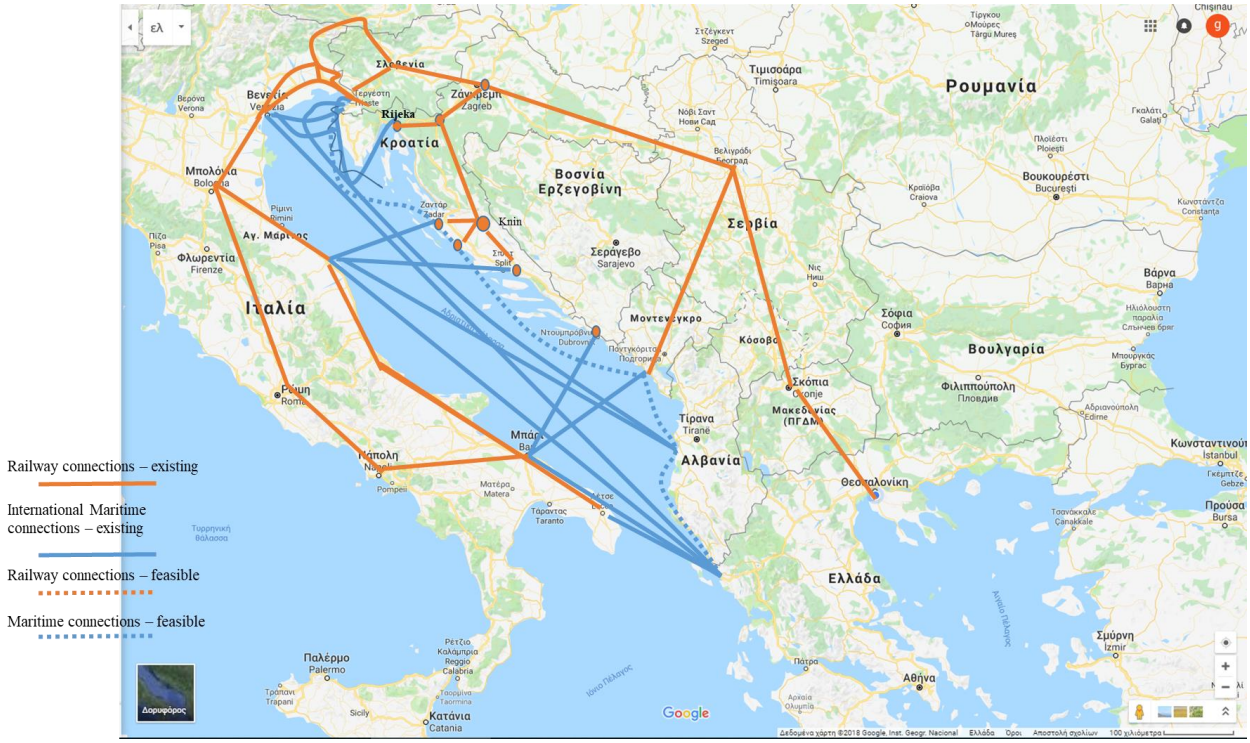


Figure 44: Rail and maritime envisaged connectivity in ADRION region, Inter-Connect cases based connectivity

- Cultural and natural heritage touristic clusters or other types of eco-tourism promotion schemes could be an answer to the challenging tourism industry. A common strategy for the whole area is considered as necessary for achieving desired results.
- Bilateral agreements like the ones developed in the framework of Rail4See project (MoUs among rail operators) can also be a case in ADRION area – latent demand may exist and therefore, supply is a prerequisite for revealing it
- Information provision apps and integrated route planners are proven to be effective tools for unlocking latent demand («Increasing the attractiveness of public transport by investing in soft ICT based measures: Going from words to actions under an austerity backdrop - Thessaloniki's case, Greece», Morfoulaki, M., Myrovali, G., Kotoula, K., Research in Transportation Economics, 51, pp. 40-48, 2015)
- Capacity building for authorities regarding the advantages of sustainable transport promotion and citizens engagement is necessary for effective decision making – policy makers should listen to users' and operators' needs, find their position inside the global tourism industry and bring stakeholders together in an attempt to find mutual benefits and work for them

ANNEX 1

Transnational connectivity

4.4The case of Igoumenitsa, GR

4.4.1 Igoumenitsa (GR) – Bologna (IT)

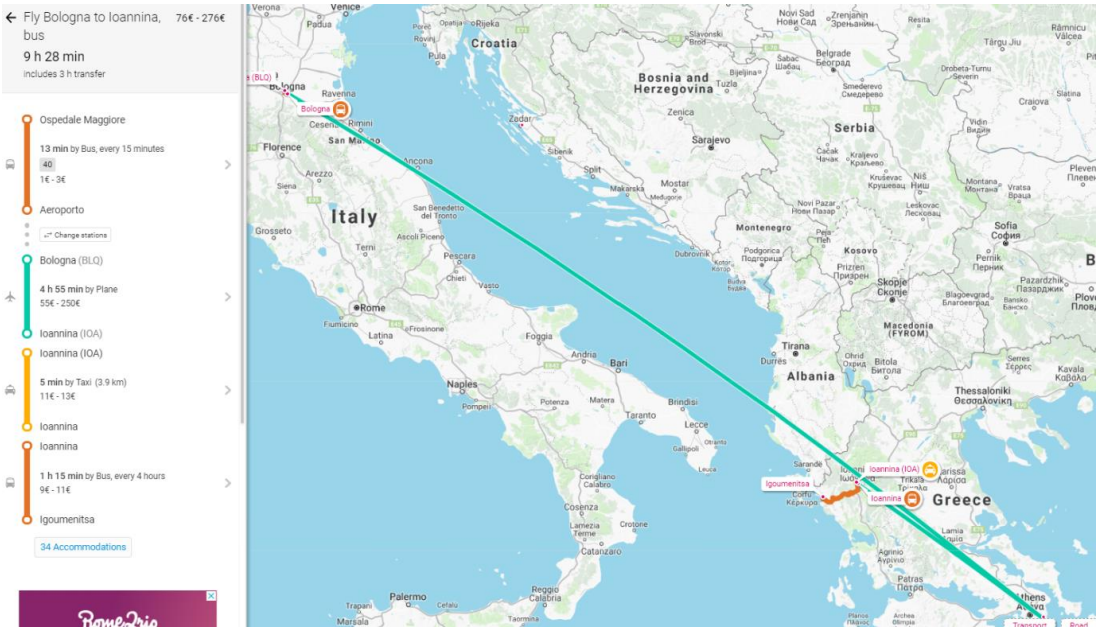


Figure 45: Air based connectivity Igoumenitsa – Bologna, *Source: romeo2rio.com*

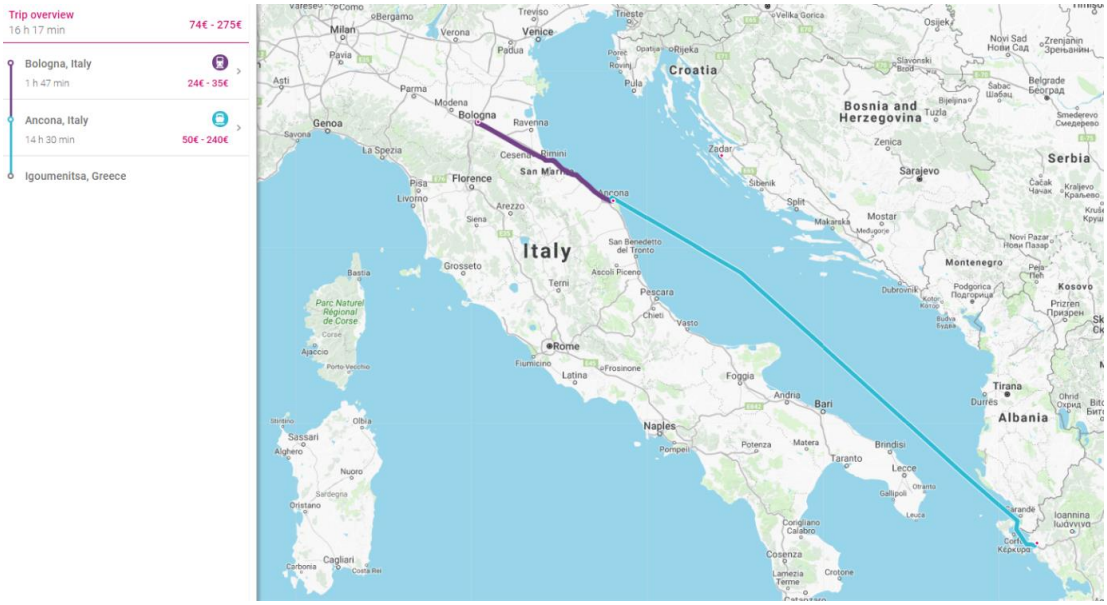


Figure 46: Maritime - rail based connectivity Igoumenitsa – Bologna, *Source: romeo2rio.com*

Table 8: Trip characteristics by mode, Igoumenitsa – Bologna

	Total travel time	Transfer time	transfers	cost
Multimodal – air based	9h 28min	3h	3	276
Multimodal – rail&maritime based	***16h 17min***	**-**	***1***	***275***

4.4.2 Igoumenitsa (GR) – Trieste (IT)

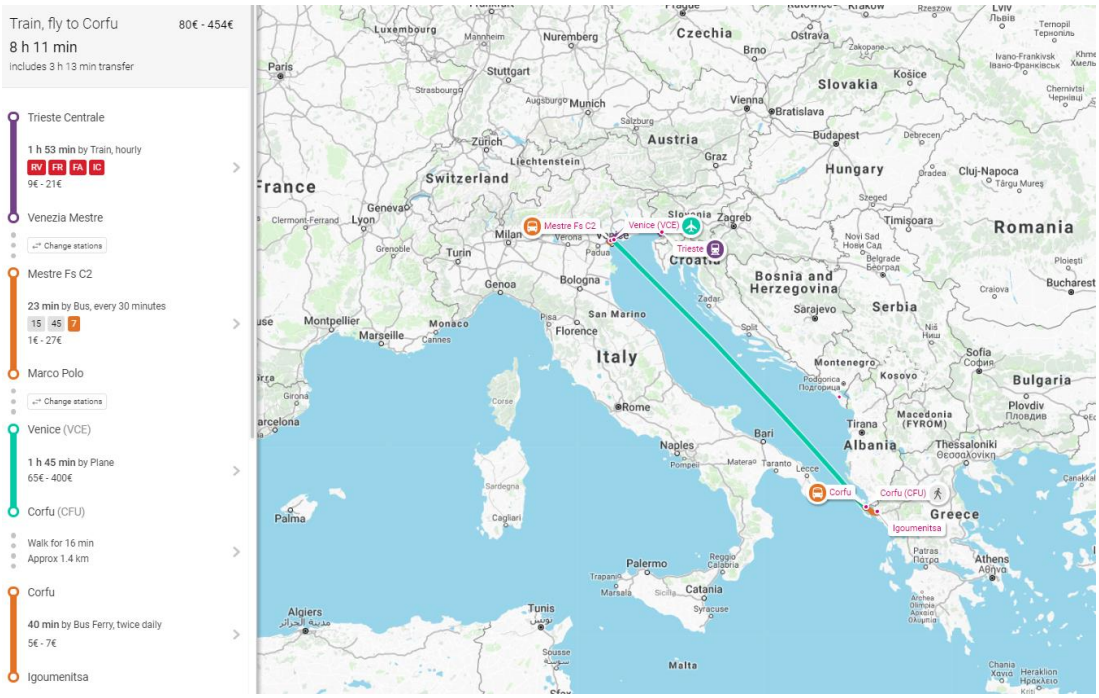


Figure 47: Air based connectivity Igoumenitsa – Trieste, *Source: romeo2rio.com*

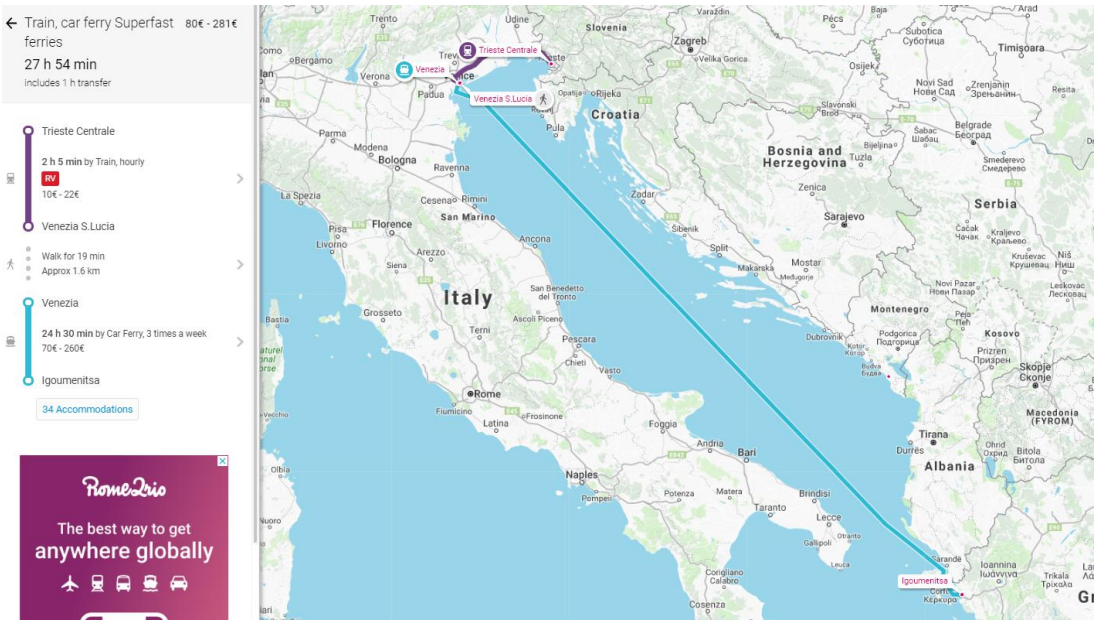


Figure 48: Maritime – rail based connectivity Igoumenitsa – Treiste, *Source: romeo2rio.com*

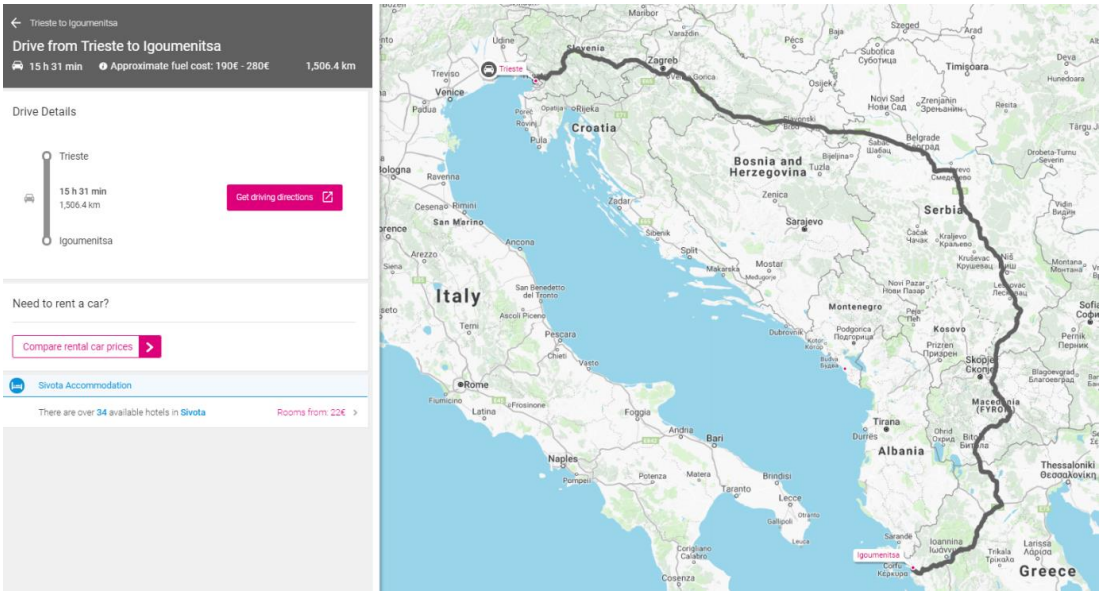


Figure 49: Road connectivity Igoumenitsa – Trieste, *Source: romeo2rio.com*

Table 9: Trip characteristics by mode, Igoumenitsa – Trieste

	Total travel time	Transfer time	transfers	cost
Multimodal – air based	8.5	3.5	3	450
Multimodal – maritime based	***28***	***1***	***1***	***280***
Road	15.5	-	-	280

4.4.3 Igoumenitsa (GR) – Slovenia coastal areas (ind. to Piran)

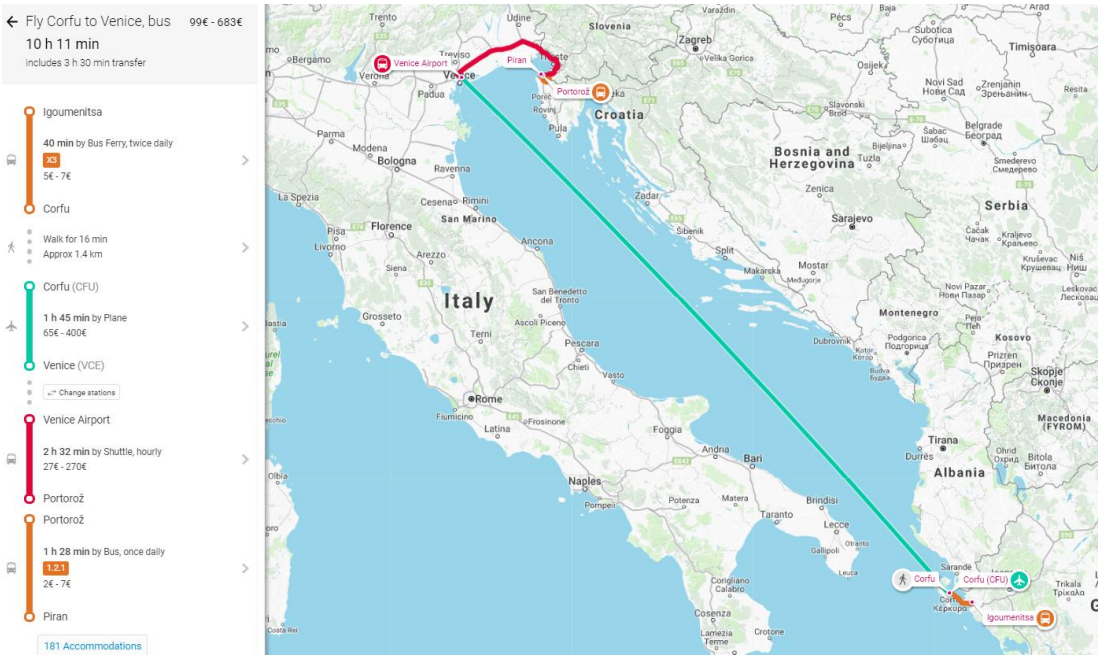


Figure 50: Air based connectivity Igoumenitsa – Piran, *Source: romeo2rio.com*

Figure 51: Maritime based connectivity Igoumenitsa – Piran, *Source: romeo2rio.com*

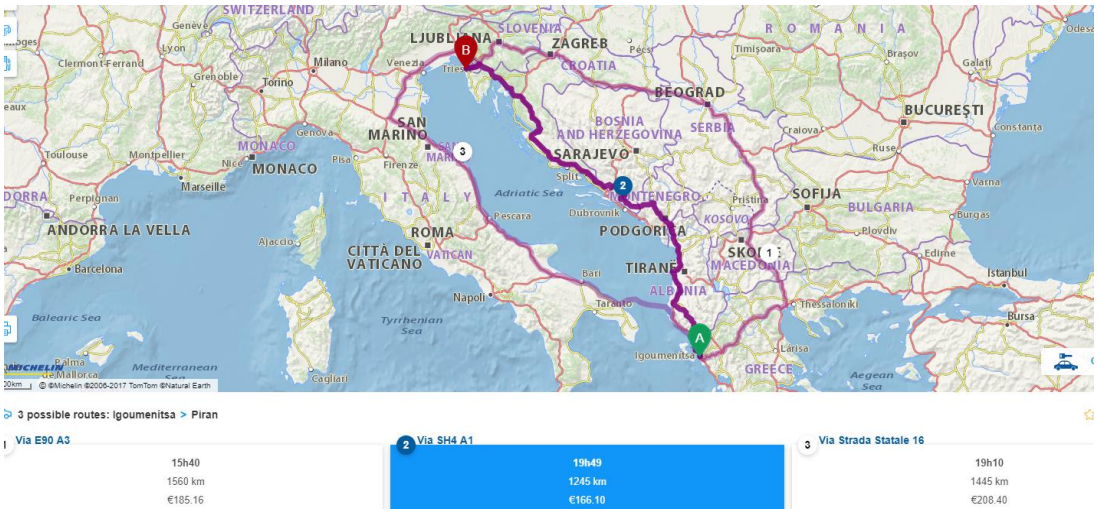


Figure 52: Road connectivity Igoumenitsa – Piran, *Source: viamichelin.com*

Table 10: Trip characteristics by mode, Igoumenitsa – Piran

	Total travel time	Transfer time	transfers	cost
Multimodal – maritime based	***28h 49min***	***1h 7min***	***2***	***340***
Multimodal – air based	10h 11min	3h 30min	3	683
Road	19h 49min	-	-	170

4.4.4 Igoumenitsa (GR) – Croatia coastal areas (ind. to Split)

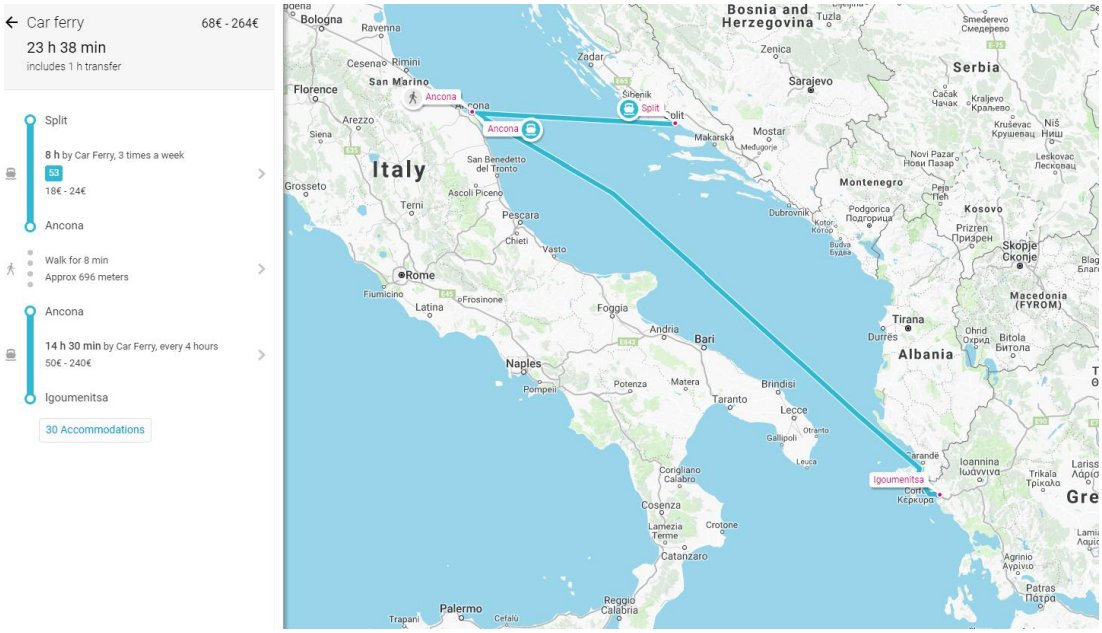


Figure 53: Maritime connectivity Igoumenitsa – Split, *Source: romeo2rio.com*

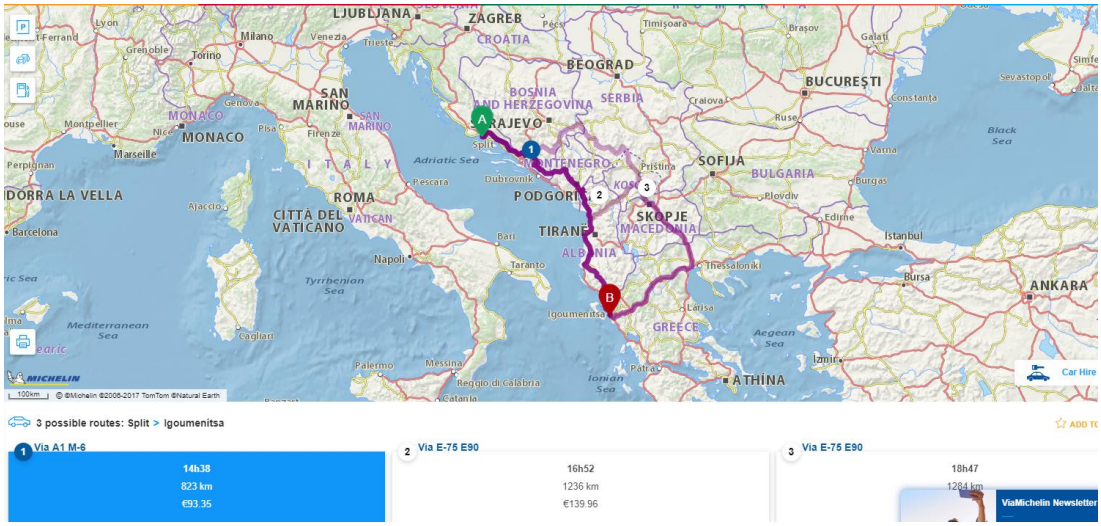


Figure 54: Road connectivity Igoumenitsa – Split, *Source: viamichelin.com*

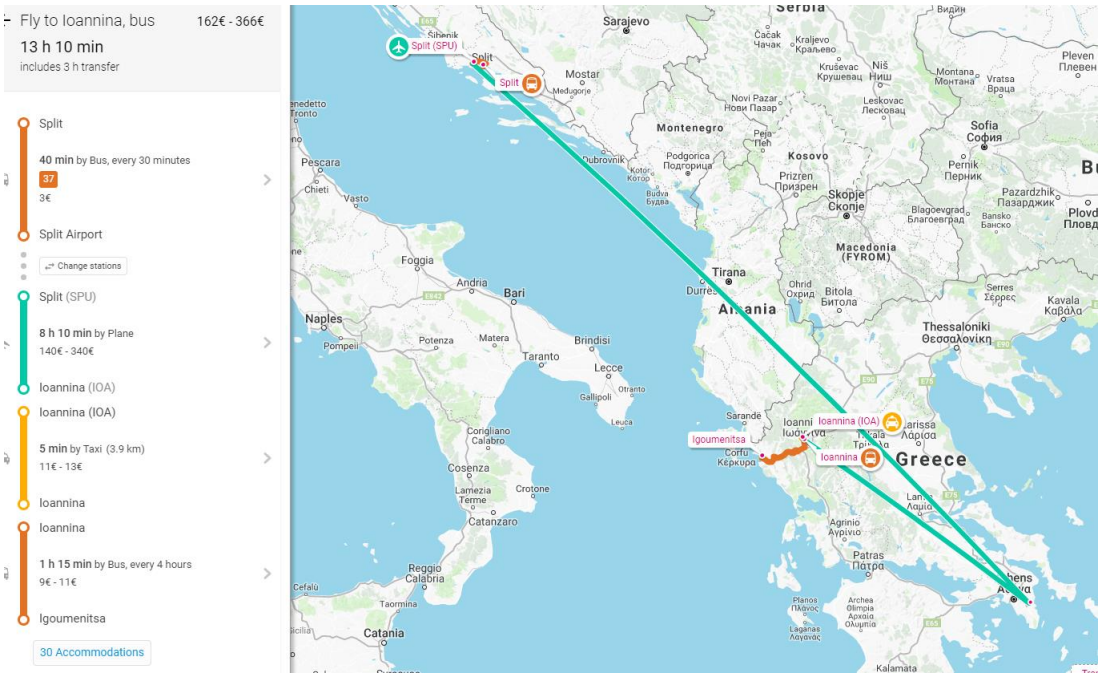


Figure 55: Air connectivity Igoumenitsa – Split, *Source: romeo2rio.com*

Table 11: Trip characteristics by mode, Igoumenitsa – Split

	Total travel time	Transfer time	transfers	cost
Maritime	***23h 38min***	***1h***	***1***	***264***
Road	14h 38min	-	-	94
Air based	13h 10min	3h	3	366

4.4.5 Igoumenitsa (GR) – Bar (ME)

Figure 56: Road connectivity Igoumenitsa – Bar, *Source: viamichelin.com*

Table 12: Trip characteristics by mode, Igoumenitsa – Bar

	Total travel time	Transfer time	transfers	cost
Road	8h 42min	-	-	50

4.4.6 Igoumenitsa (GR) – Durres (AL)

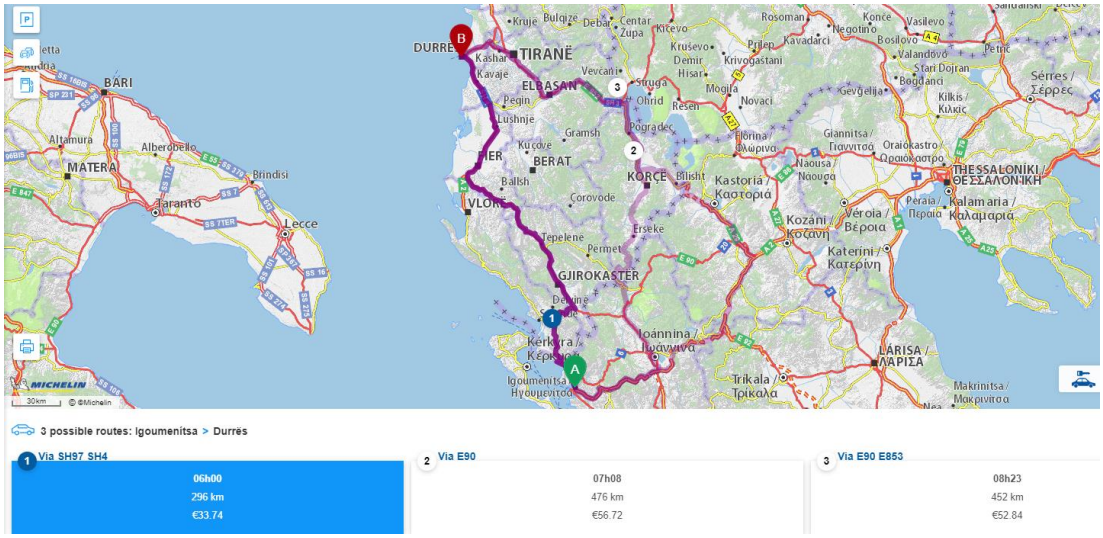


Figure 57: Road connectivity Igoumenitsa – Durres, *Source: viamichelin.com*

Table 13: Trip characteristics by mode, Igoumenitsa – Durres

	Total travel time	Transfer time	transfers	cost
Road	6h 00min	-	-	35

4.4.7 Igoumenitsa (GR) – Belgrade (SB)

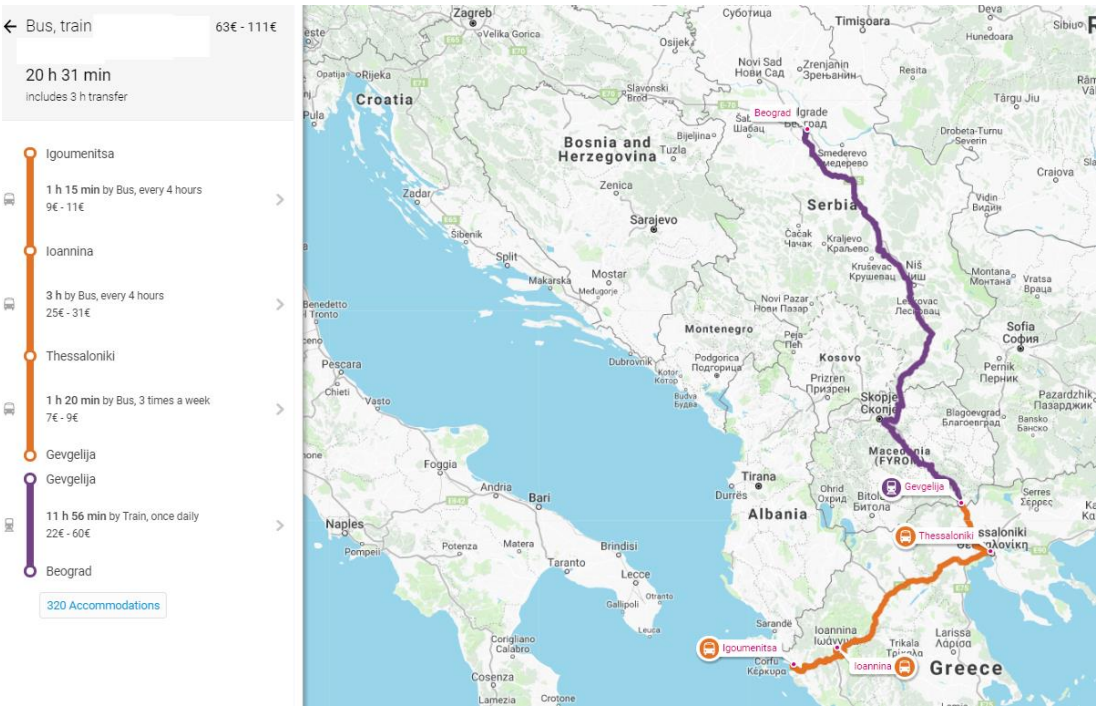


Figure 58: Rail based connectivity Igoumenitsa – Belgrade, *Source: romeo2rio.com*

Figure 59: Road connectivity Igoumenitsa – Belgrade, *Source: viamichelin.com*

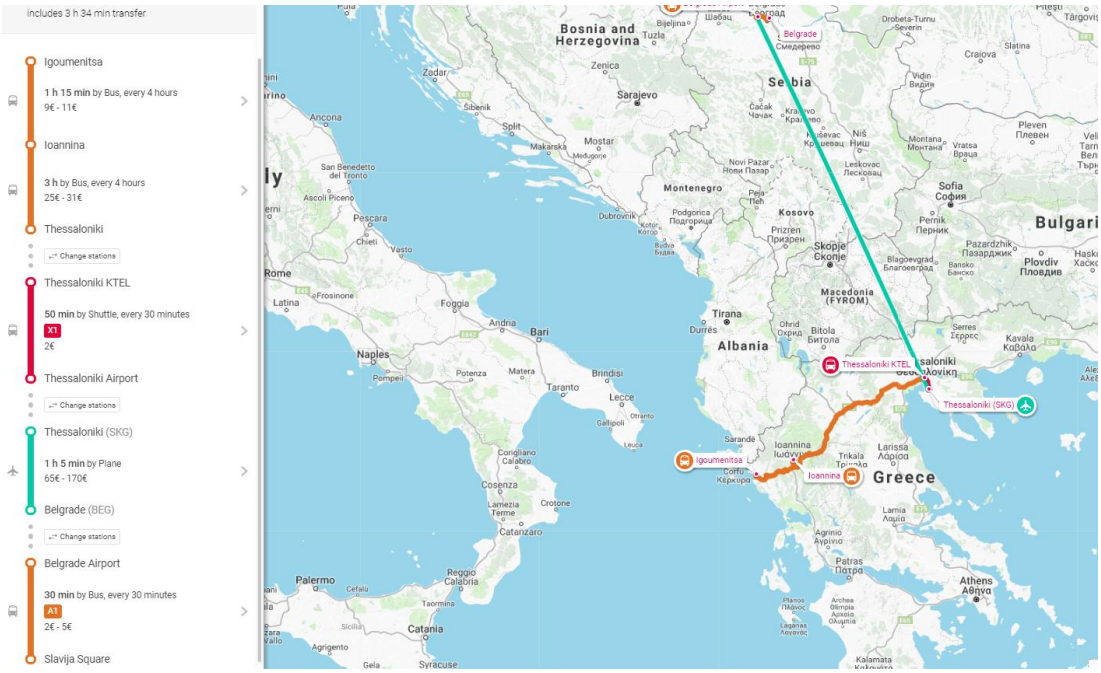


Figure 60: Air based connectivity Igoumenitsa – Belgrade, *Source: romeo2rio.com*

Table 14: Trip characteristics by mode, Igoumenitsa – Belgrade

	Total travel time	Transfer time	transfers	cost
Multimodal/ rail based	***20h 31min***	***3h***	***1***	***111***
Multimodal/ air based	10h 14min	3h 34min	3	219
Road	9h 33min	-	-	100

4.5The case of Bologna and Region Emilia Romagna, IT

4.5.1 Bologna (IT) – Igoumenitsa (GR)

(as Igoumenitsa - Bologna)

4.5.2 Bologna (IT) – Slovenia coastal areas (ind. to Piran)

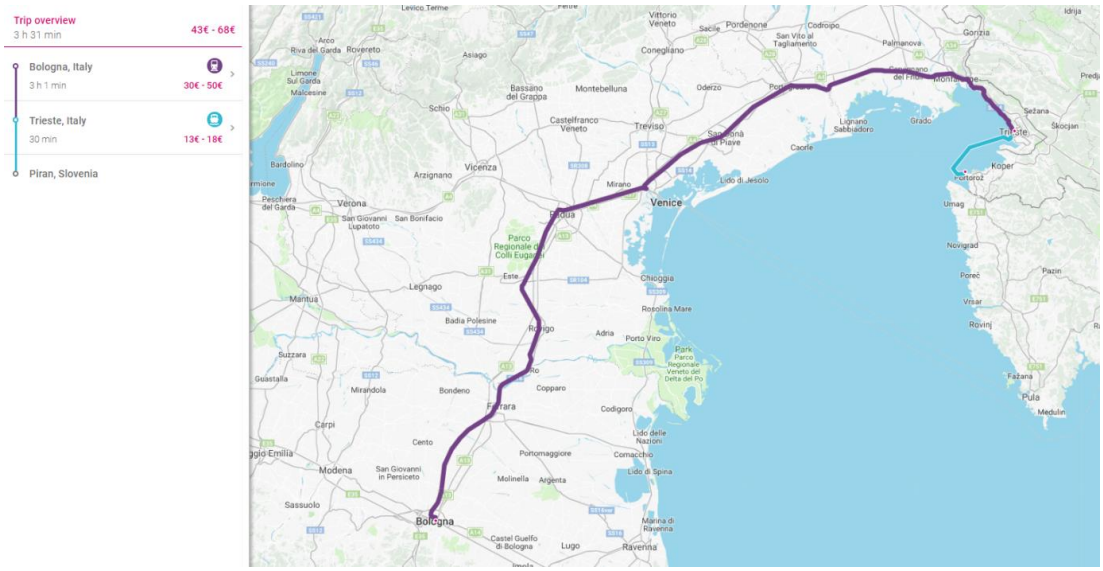


Figure 61: Rail connectivity Bologna – Piran, *Source: romeo2rio.com*

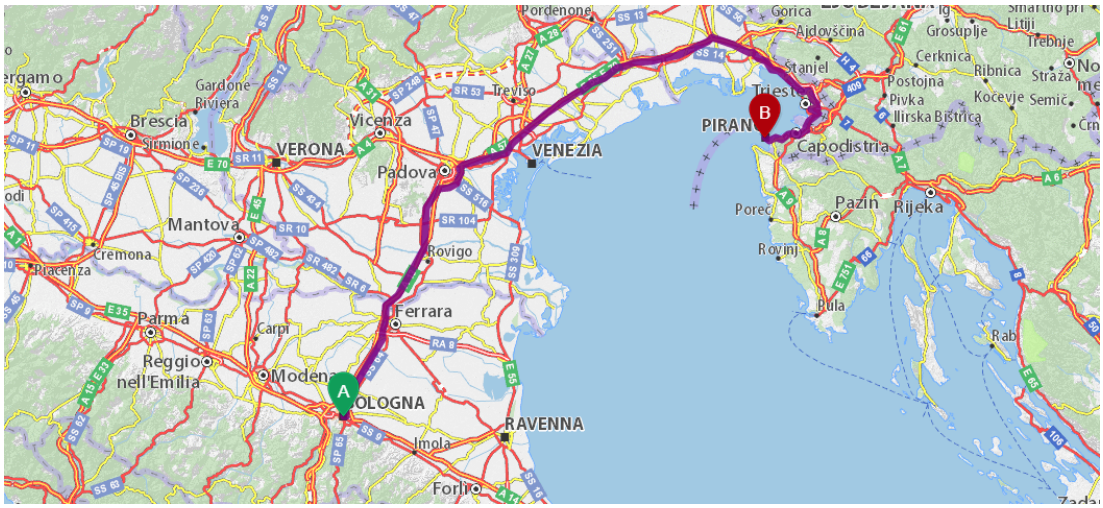


Figure 62: Road connectivity Bologna – Piran, Source: viamichelin.com

Table 15: Trip characteristics by mode, Bologna – Piran

	Total travel time	Transfer time	transfers	cost
Multimodal – rail&maritime based	***3h 31min***	-	***1***	***68***
Road	3h 40min	-	-	68

4.5.3 Bologna (IT) - Croatia coastal areas (ind. to Split)

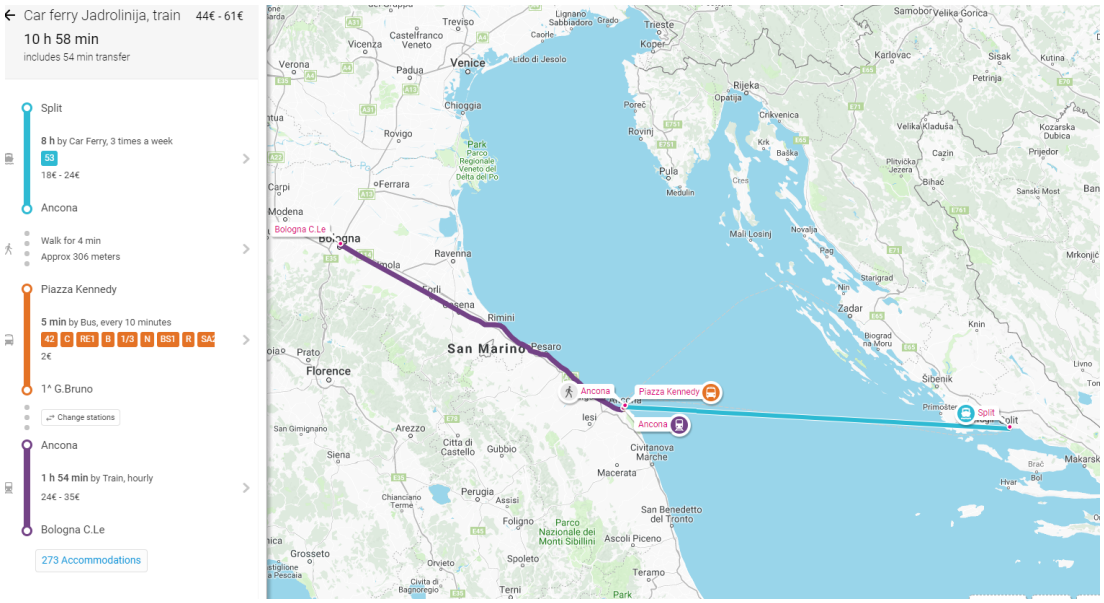


Figure 63: Maritime - Rail connectivity Bologna – Split, Source: romeo2rio.com

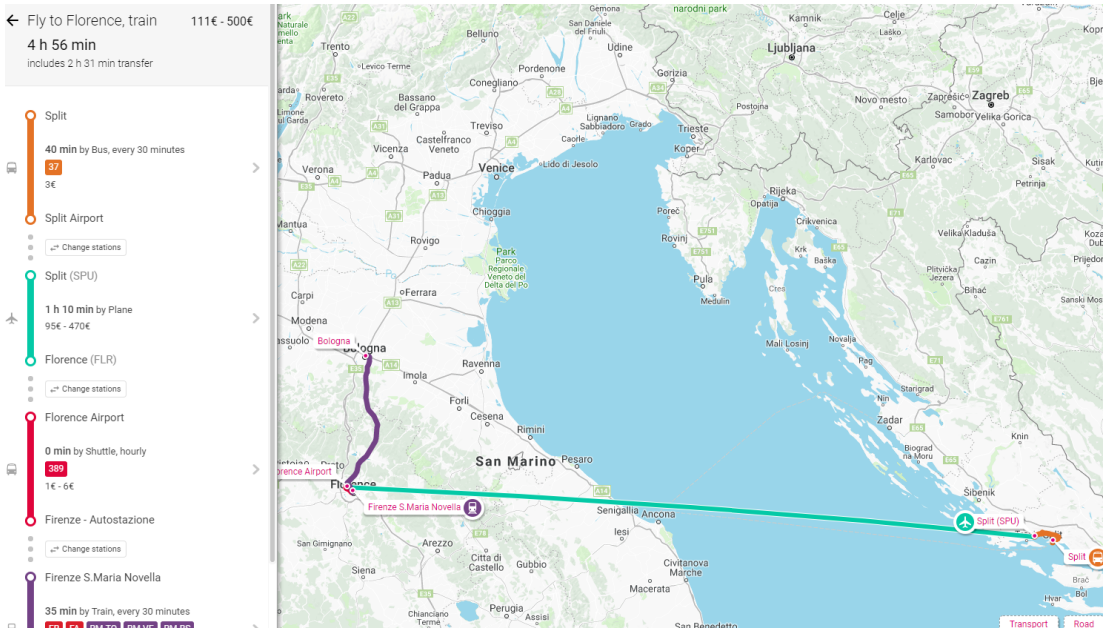


Figure 64: Air based connectivity Bologna – Split, Source: romeo2rio.com

Table 16: Trip characteristics by mode, Bologna – Split

	Total travel time	Transfer time	transfers	cost
Maritime & rail	***10h 58min***	***54min***	***2***	***61***
Air & rail	4h 56min	2h 31min	3	500

4.5.1 Bologna (IT) - Bar (ME)

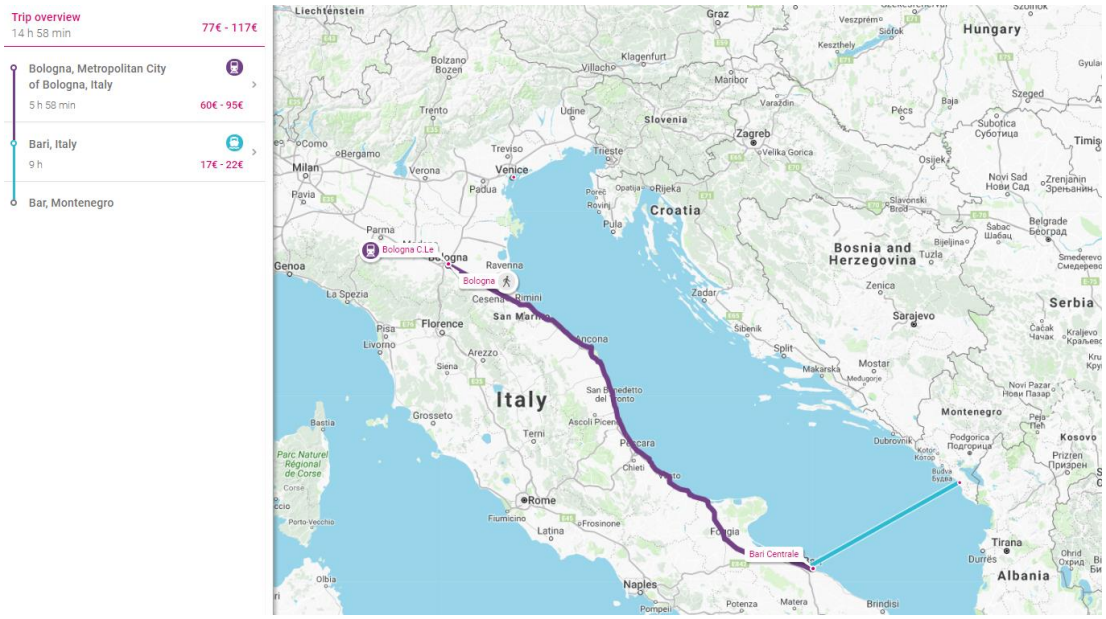


Figure 65: Maritime - Rail connectivity Bologna – Bar, Source: romeo2rio.com

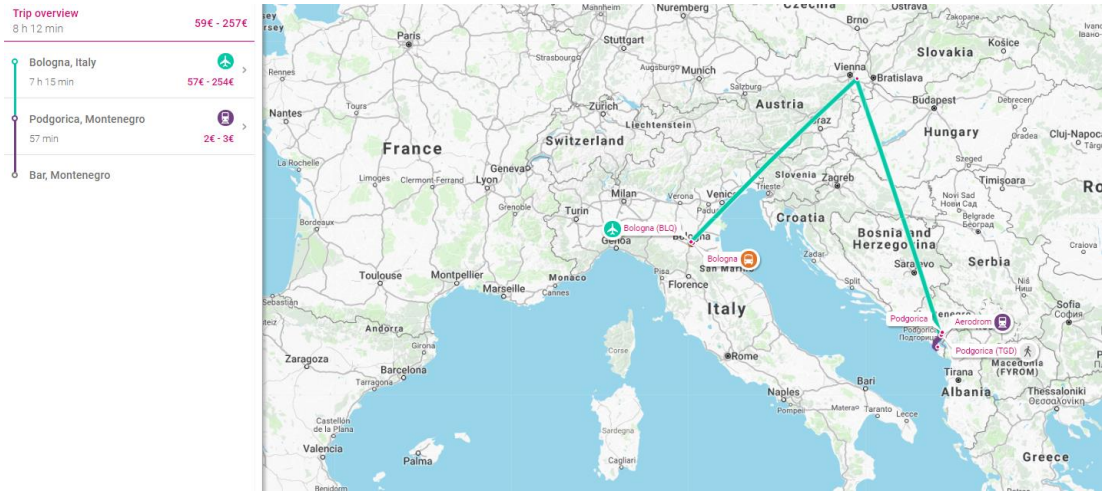


Figure 66: Air based connectivity Bologna – Bar, Source: romeo2rio.com

Table 17: Trip characteristics by mode, Bologna – Bar

	Total travel time	Transfer time	transfers	cost
Multimodal/ rail - maritime based	***17h 17min***	**-**	***1***	***154***
Multimodal/ air based	8h 12min	-	2	257
Car+ferry	16h 46min	-	-	240

4.5.2 Bologna (IT) - Durres (AL)

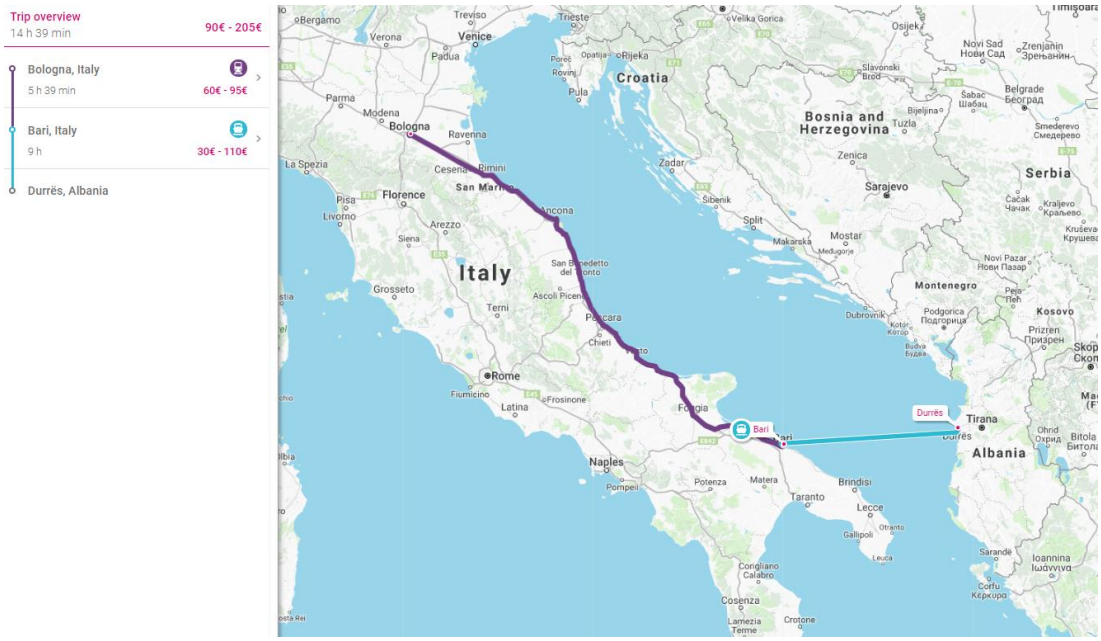


Figure 67: Maritime - Rail connectivity Bologna – Durres, Source: romeo2rio.com

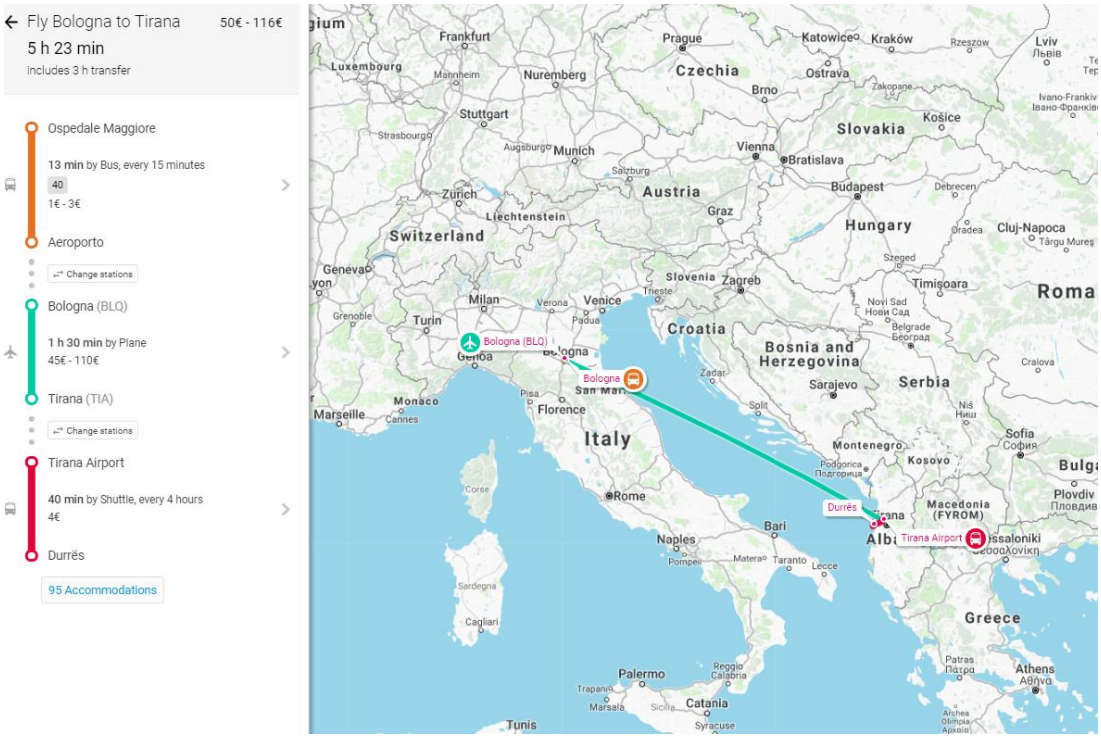


Figure 68: Air based connectivity Bologna – Durres, Source: romeo2rio.com

Table 18: Trip characteristics by mode, Bologna – Durres

	Total travel time	Transfer time	transfers	cost
Multimodal/ rail+maritime based	***14h 39min***	**-**	***1***	***205***
Multimodal/ air based	5h 23min	3h	2	116

4.5.3 Bologna (IT) - Belgrade (SB)

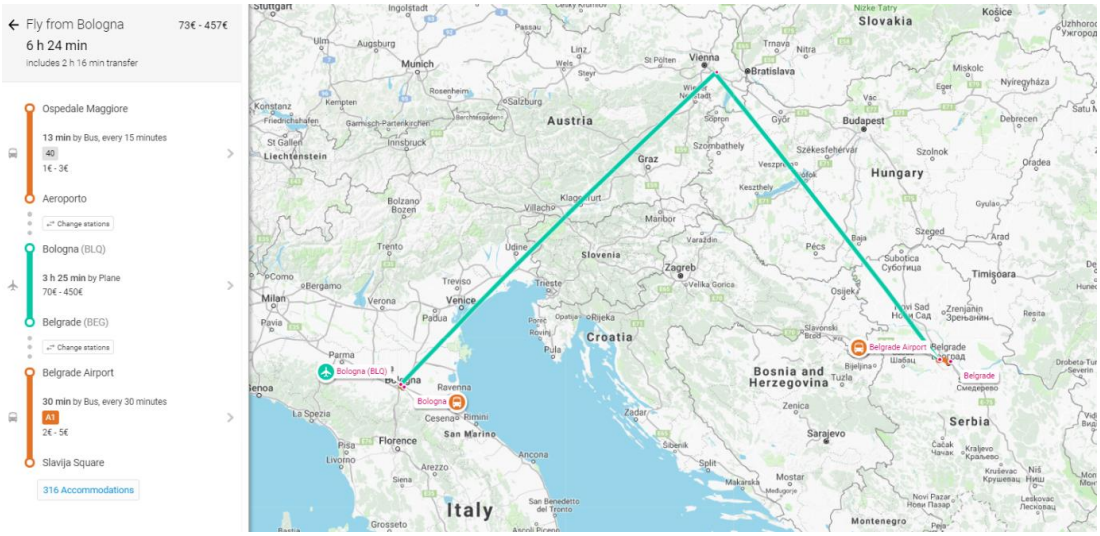


Figure 69: Air based connectivity Bologna – Belgrade, Source: romeo2rio.com

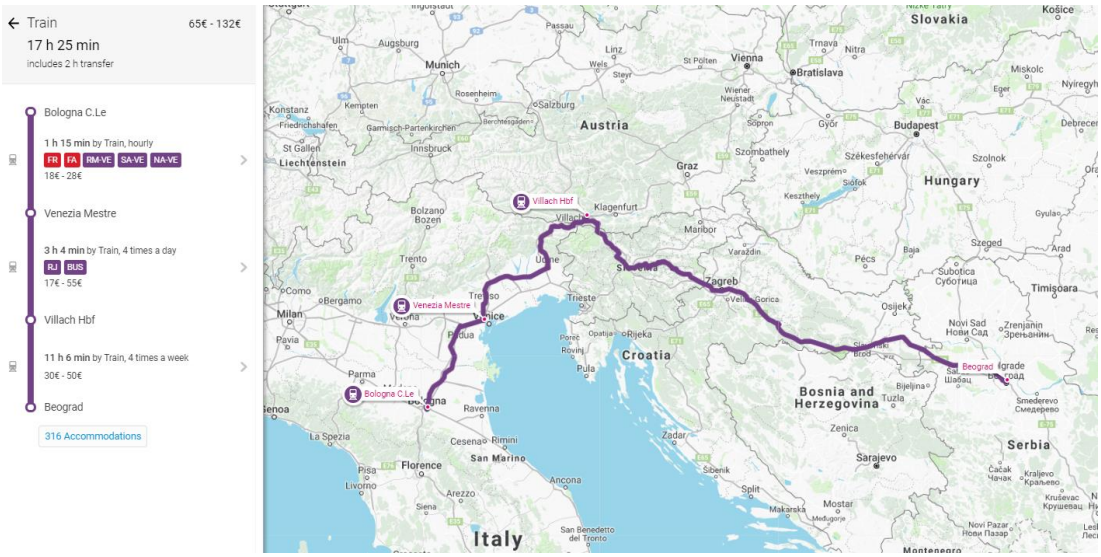


Figure 70: Rail connectivity Bologna – Belgrade, Source: romeo2rio.com

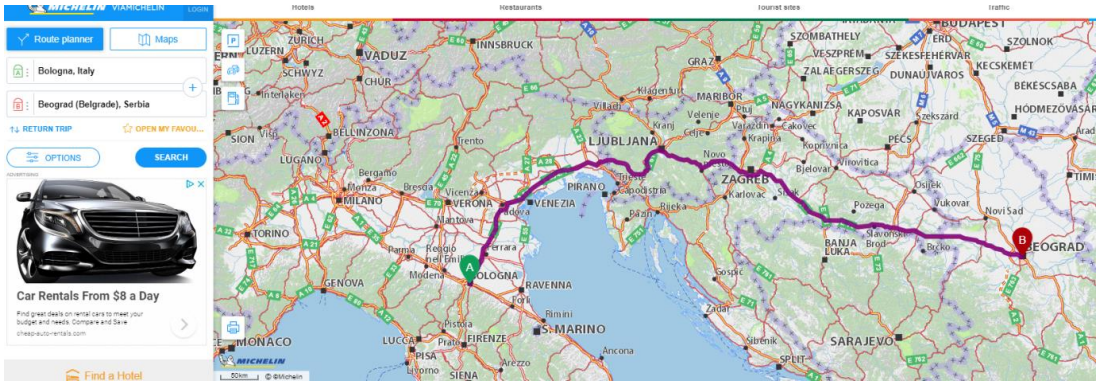


Figure 71: Road connectivity Bologna – Belgrade, Source: viamichelin.com

Table 19: Trip characteristics by mode, Bologna – Belgrade

	Total travel time	Transfer time	transfers	cost
Multimodal/ rail based	***17h 25min***	***2h***	***2***	***132***
Multimodal/ air based	6h 24min	2h 16min	2	457
Road	8h 38min	-	-	140

4.6The case of Trieste and Friuli-Venezia Giulia, IT

4.6.1 Trieste (IT) – Igoumenitsa (GR)

(as Igoumenitsa - Trieste)

4.6.2 Trieste (IT) – Slovenia coastal areas (ind. to Piran)

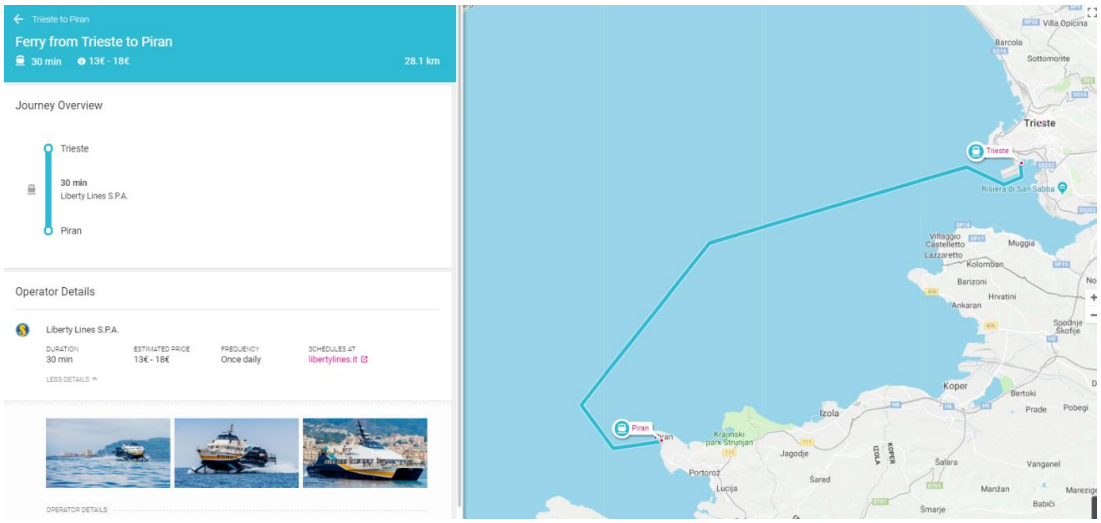


Figure 72: Maritime connectivity Trieste – Piran, Source: romeo2rio.com

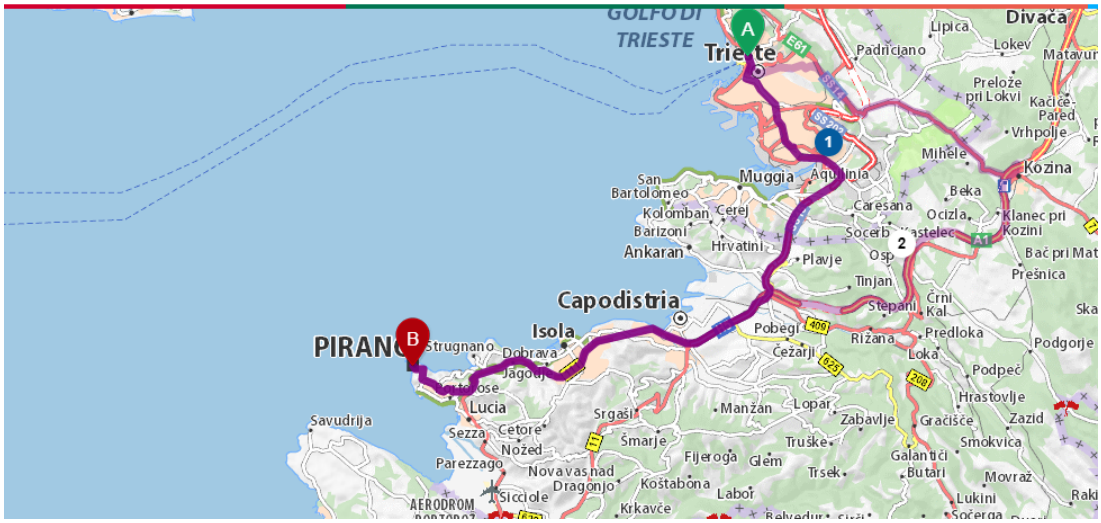


Figure 73: Road connectivity Trieste – Piran, Source: viamichelin.com

Table 20: Trip characteristics by mode, Trieste – Piran

	Total travel time	Transfer time	transfers	cost
Multimodal – maritime based	***30min***	-	-	***18***
Road	52min	-	-	20

4.6.3 Trieste (IT) – Croatia coastal areas (ind. to Split)

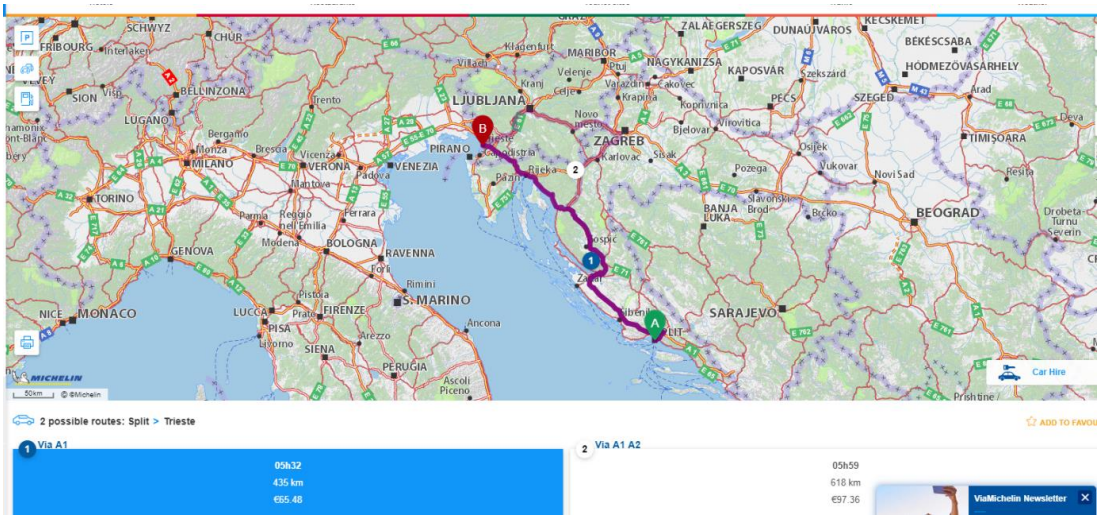


Figure 74: Road connectivity Trieste – Split, Source: viamichelin.com

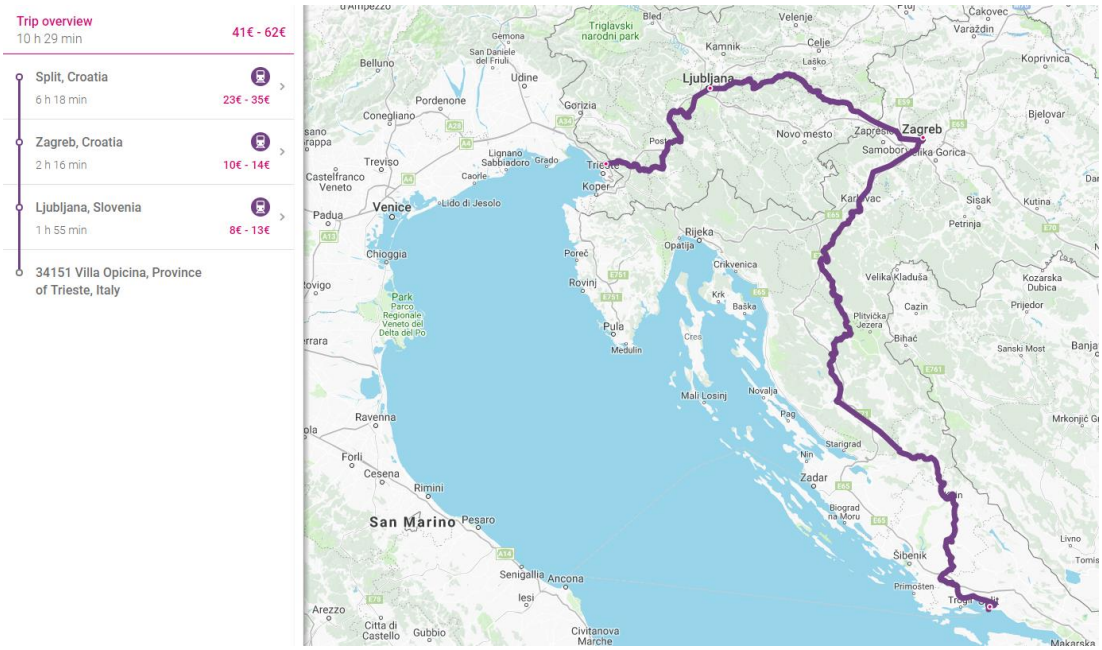


Figure 75: Rail connectivity Trieste – Split, Source: romeo2rio.com

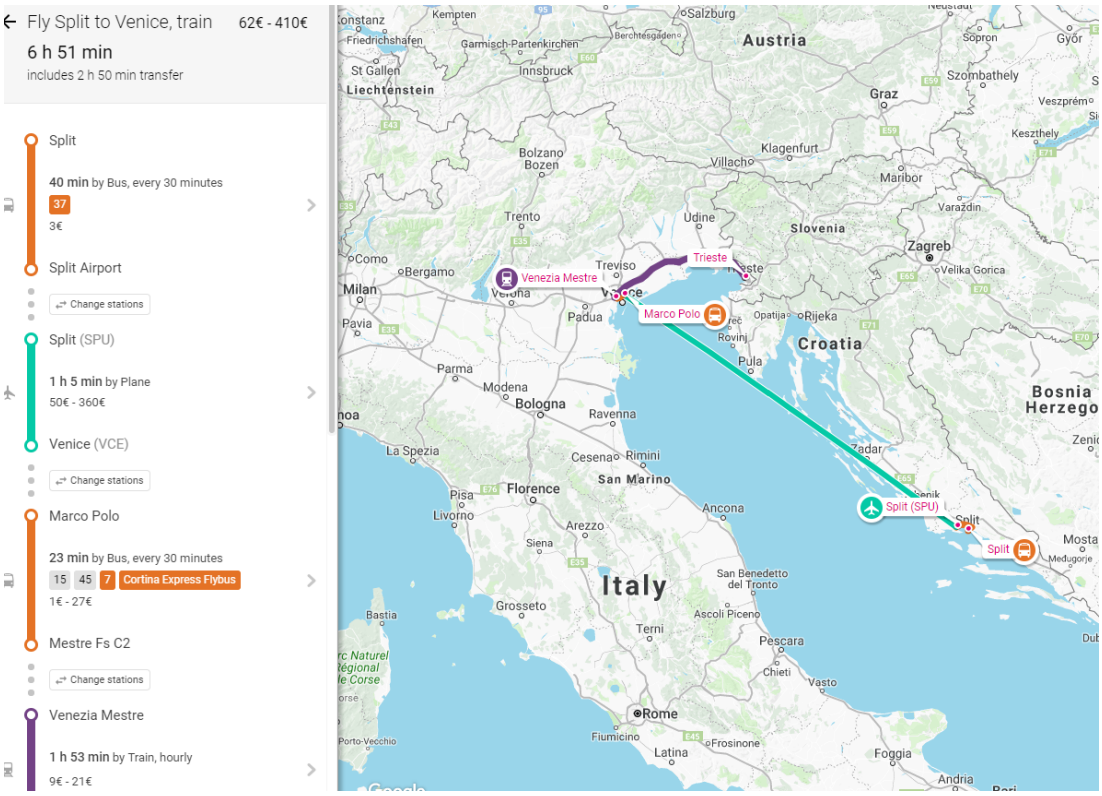


Figure 76: Air based connectivity Trieste – Split, Source: romeo2rio.com

Table 21: Trip characteristics by mode, Trieste – Split

	Total travel time	Transfer time	transfers	cost
Air&Rail	6h 51min	2h 50min	3	410
Rail	***10h 29min***	**-**	***3***	***62***
Road	5h 32min	-	-	66

4.6.4 Trieste (IT) – Bar (ME)

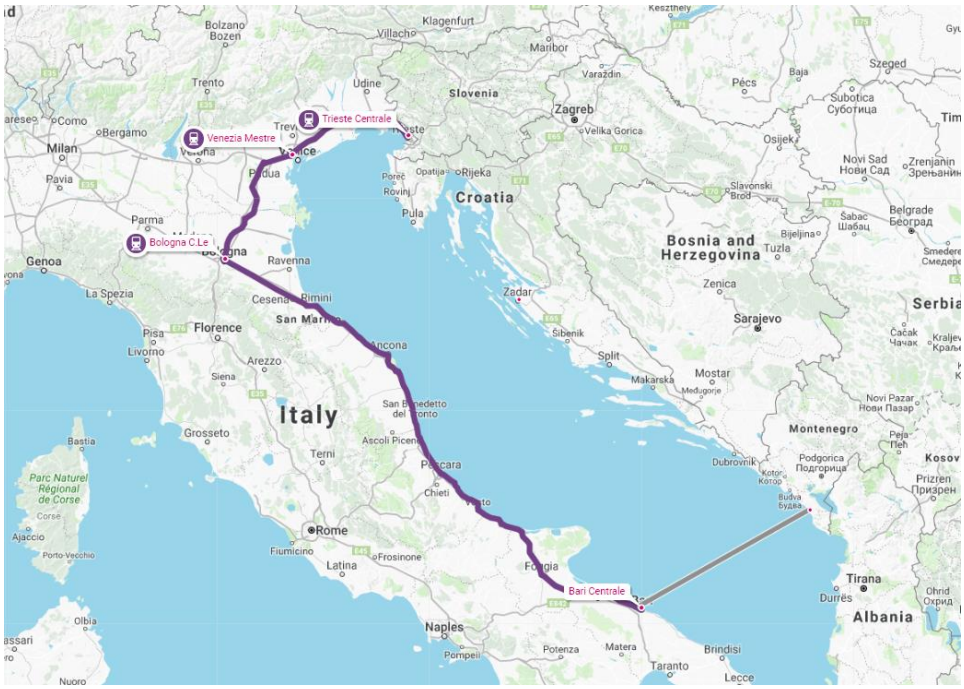


Figure 77: Maritime - Rail connectivity Trieste – Bar, Source: romeo2rio.com

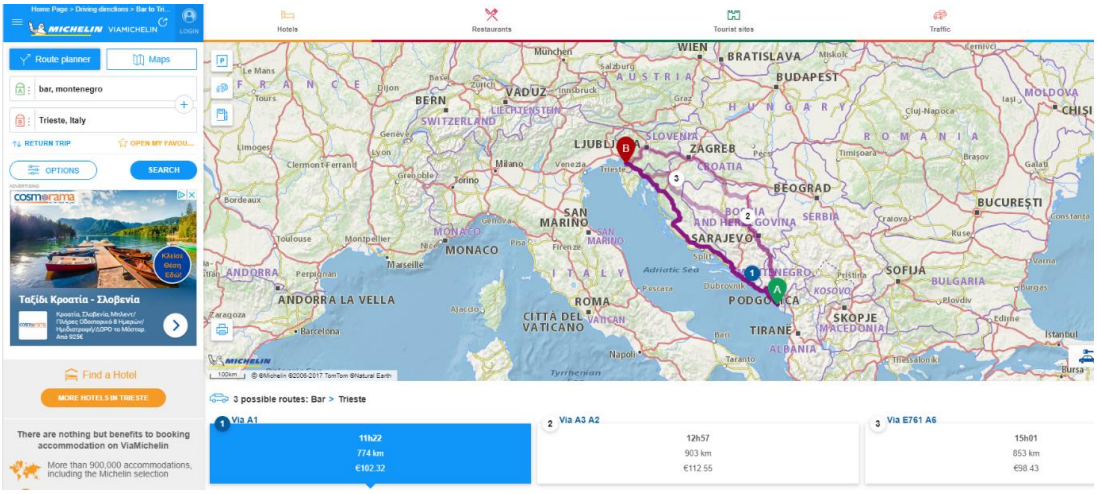


Figure 78: Road connectivity Trieste – Bar, Source: viamichelin.com

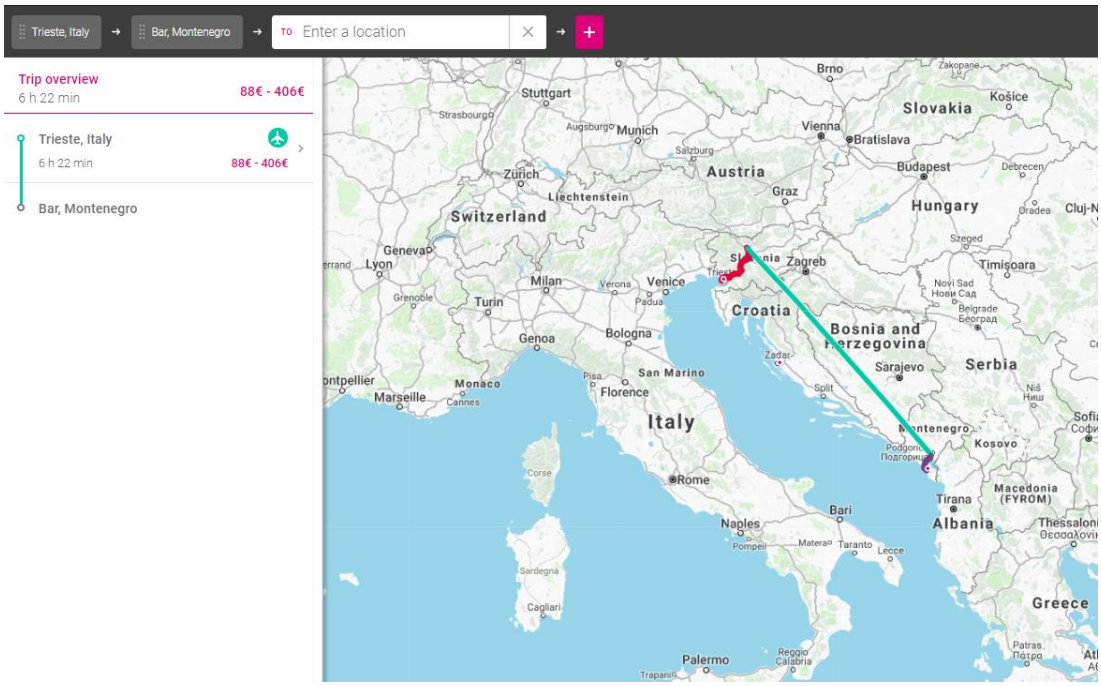


Figure 79: Air connectivity Trieste – Bar, Source: romeo2rio.com

Table 22: Trip characteristics by mode, Trieste – Bar

	Total travel time	Transfer time	transfers	cost
Multimodal/ rail - maritime based	***19h 15min***	**-**	***1***	***155***
Multimodal/ air based	6h 22min		3	406
Road	11h 22min	-	-	102

4.6.5 Trieste (IT) – Durres (AL)

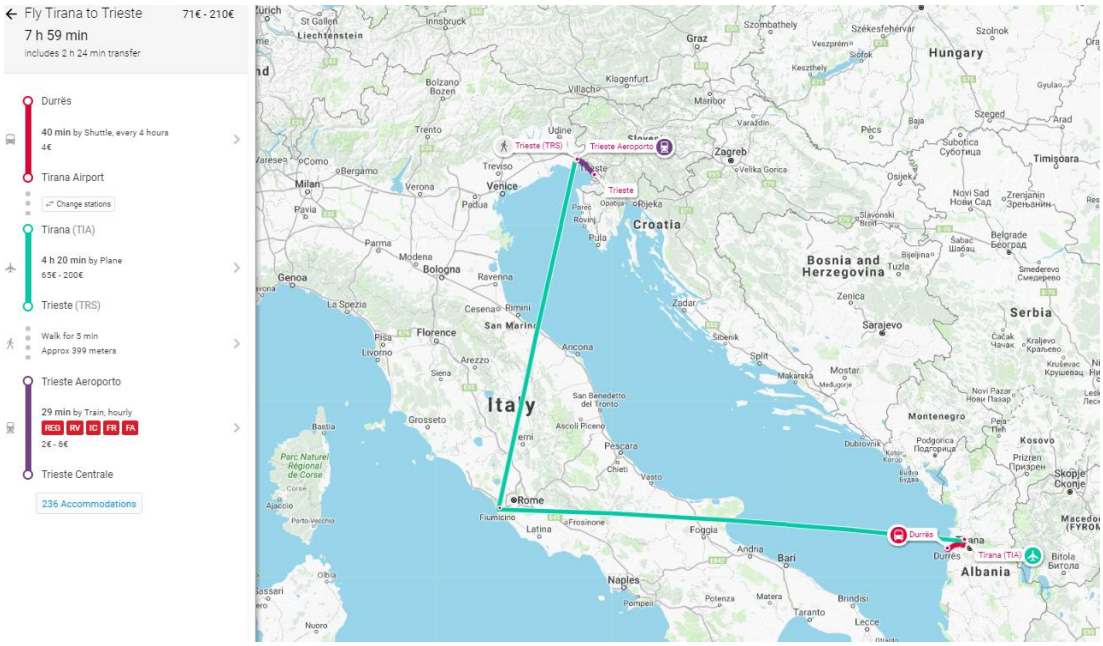


Figure 80: Air connectivity Trieste – Durres, Source: romeo2rio.com

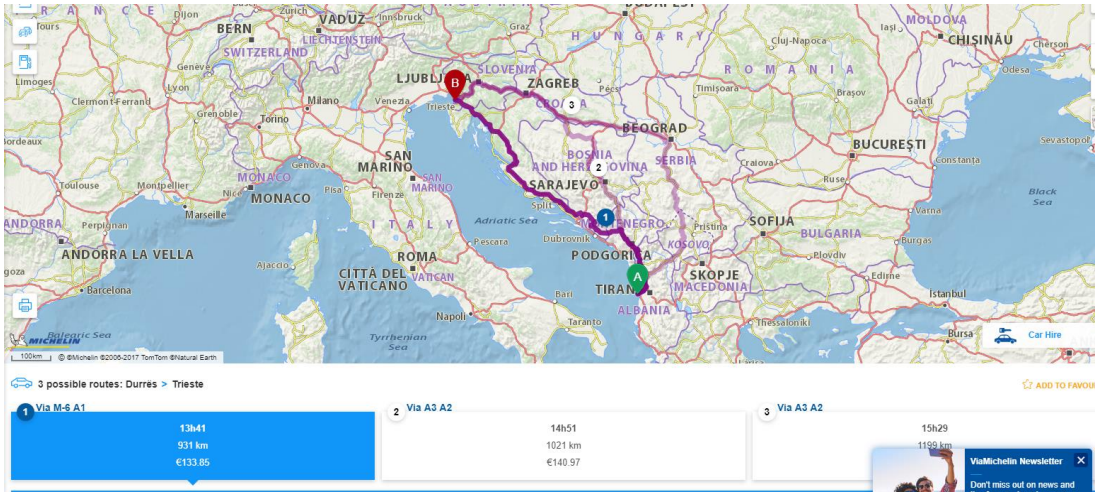


Figure 81: Road connectivity Trieste – Durres, Source: viamichelin.com

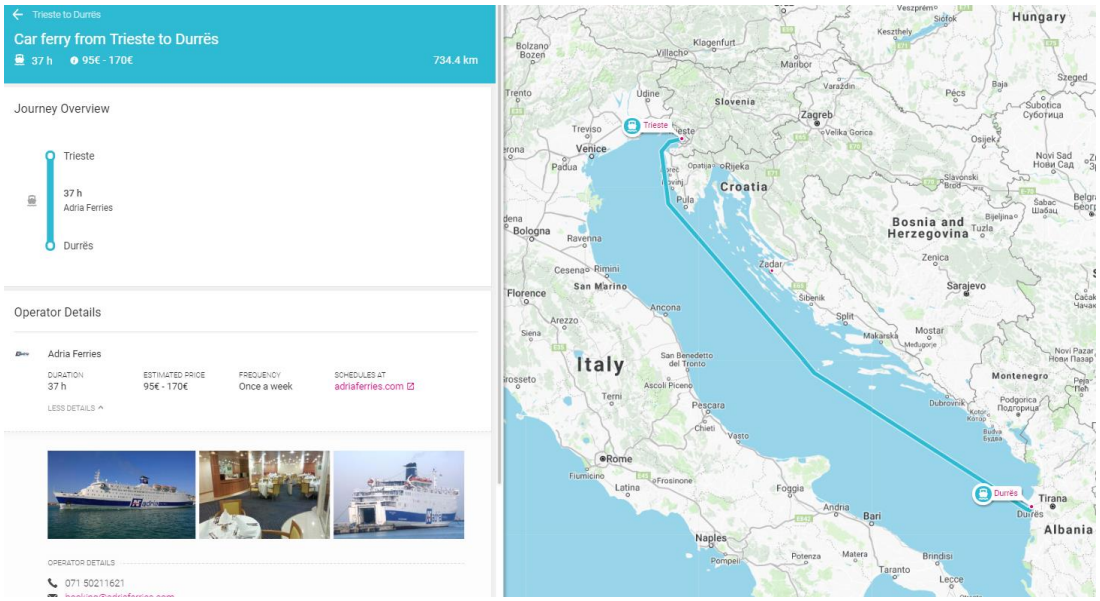


Figure 82: Maritime connectivity Trieste – Durres, Source: romeo2rio.com

Table 23: Trip characteristics by mode, Trieste – Durres

	Total travel time	Transfer time	transfers	cost
Multimodal/ maritime based	***37h***	**-**	**-**	***170***
Multimodal/ air based	7h 59min	2h 24min	2	210
Road	13h 41min	-	-	133

4.6.6 Trieste (IT) – Belgrade (SB)

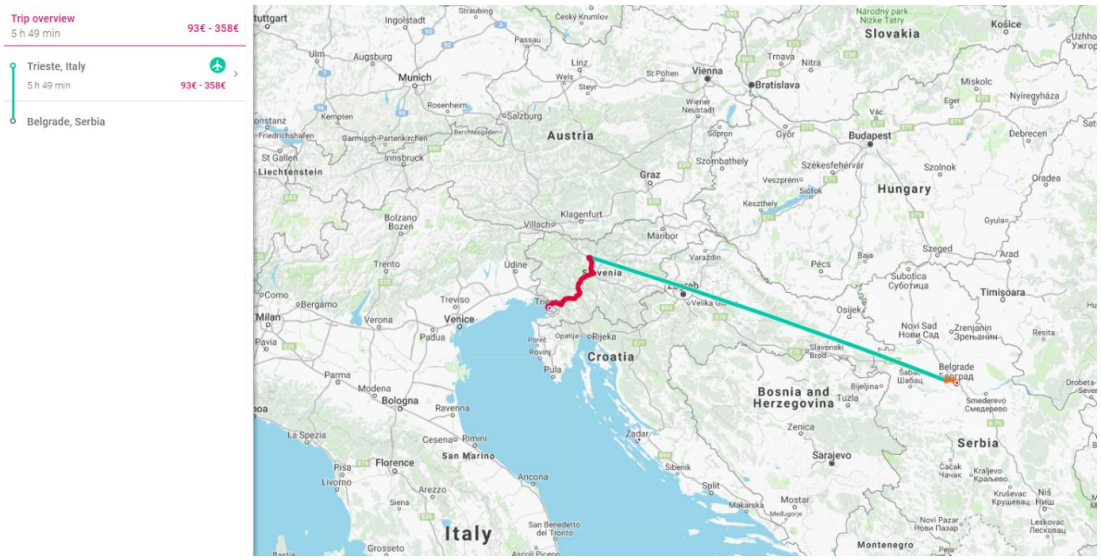


Figure 83: Air based connectivity Trieste – Belgrade, Source: romeo2rio.com

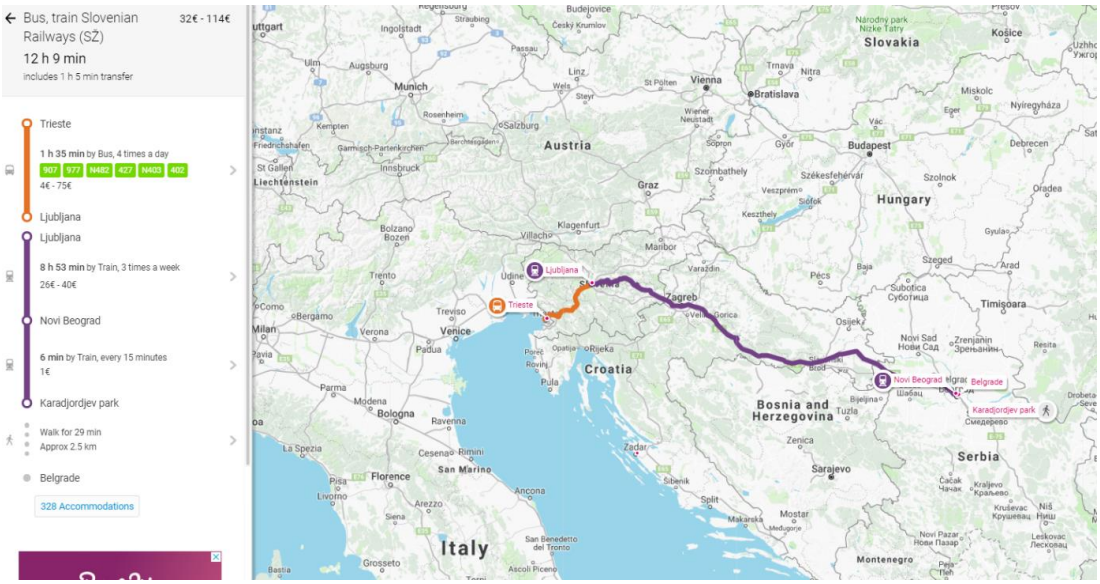


Figure 84: Rail based connectivity Trieste – Belgrade, Source: romeo2rio.com

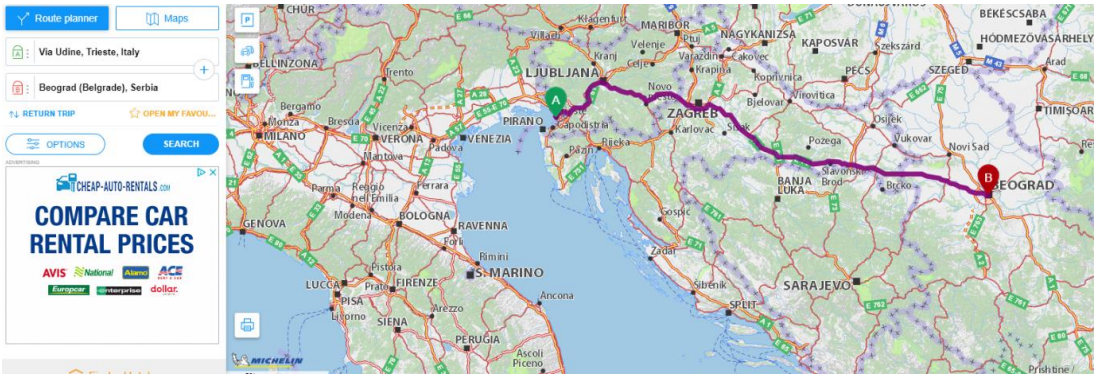


Figure 85: Road connectivity Trieste – Belgrade, Source: viamichelin.com

Table 24: Trip characteristics by mode, Trieste – Belgrade

	Total travel time	Transfer time	transfers	cost
Multimodal/ rail based	***12h 9min***	***1h 5min***	***1***	***114***
Multimodal/ air based	5h 49min	-	2	358
Road	5h 59min	-	-	90

4.7The case of Zagreb, HR

4.7.1 Croatia coastal areas (ind. to Split) – Igoumenitsa (GR) (as Igoumenitsa - Split)

4.7.2 Croatia coastal areas (ind. to Split) - Bologna (IT) (as Bologna - Split)

4.7.3 Croatia coastal areas (ind. to Split) - Trieste (IT) (as Trieste - Split)

4.7.4 Croatia coastal areas (ind. to Split) – Slovenia coastal areas (ind. to Piran)

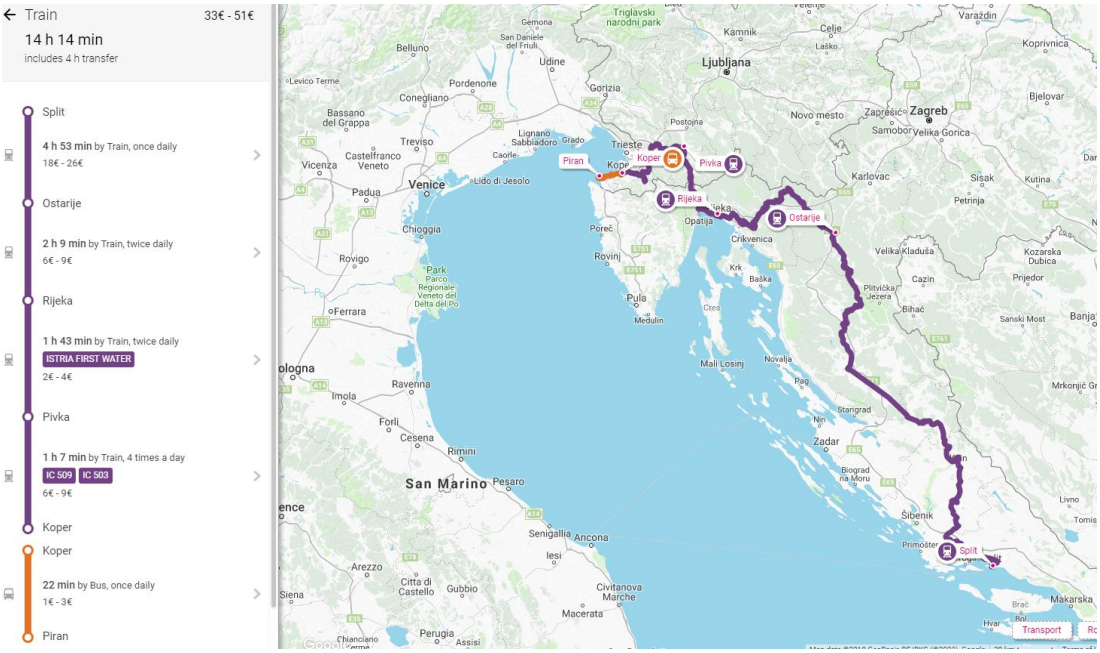


Figure 86: Rail connectivity Split - Piran, Source: romeo2rio.com

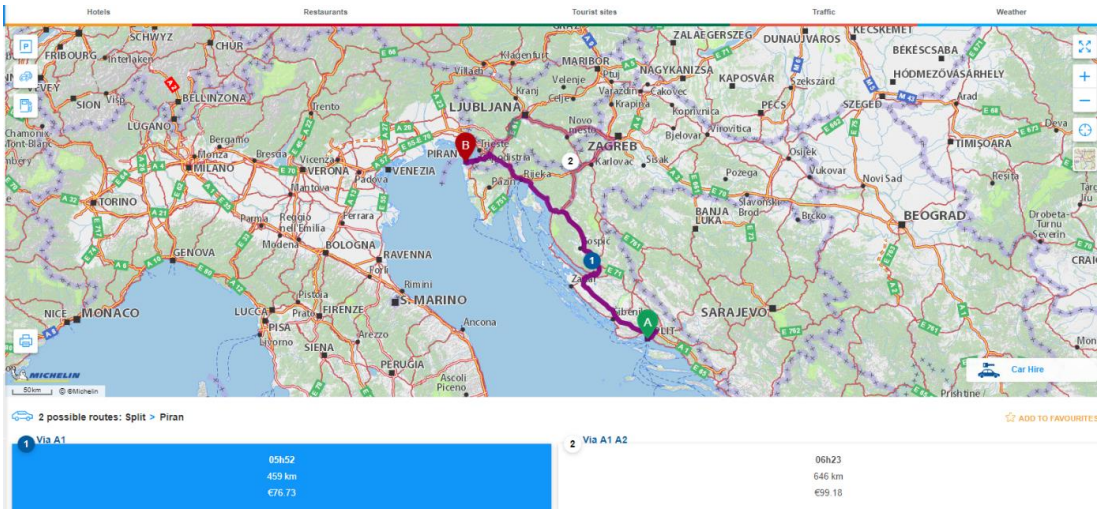


Figure 87: Road connectivity Split - Piran, Source: viamichelin.com

Table 25: Trip characteristics by mode, Split – Piran

	Total travel time	Transfer time	transfers	cost
Rail	***14h 14min***	***4h***	***1***	***51***
Road	5h 52min	-	-	77

4.7.5 Croatia coastal areas (ind. to Split) – Bar

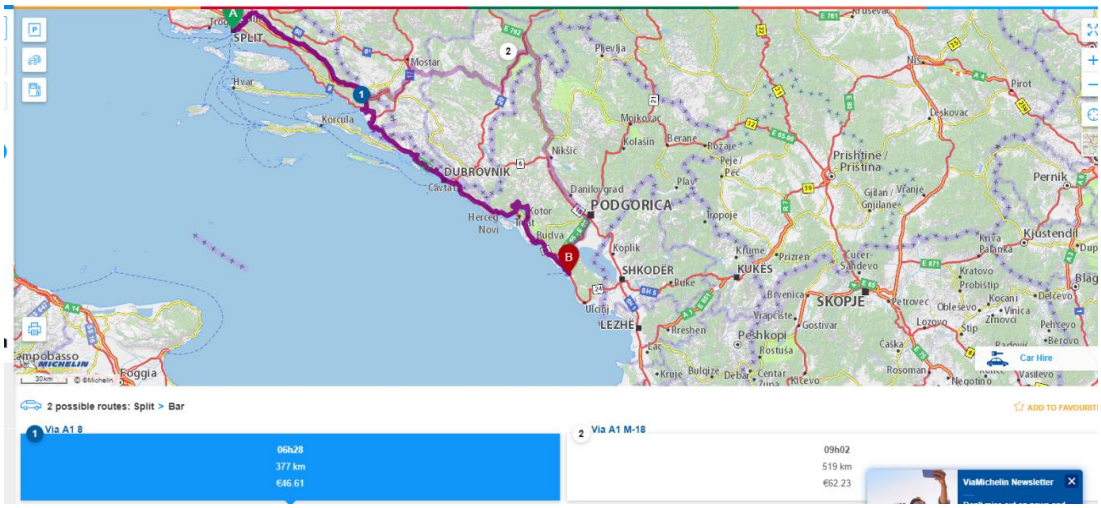


Figure 88: Road connectivity Split - Bar, Source: viamichelin.com

Table 26: Trip characteristics by mode, Split – Bar

	Total travel time	Transfer time	transfers	cost
Road	6h 28min	-	-	47

4.7.6 Croatia coastal areas (ind. to Split) – Durres (AL)

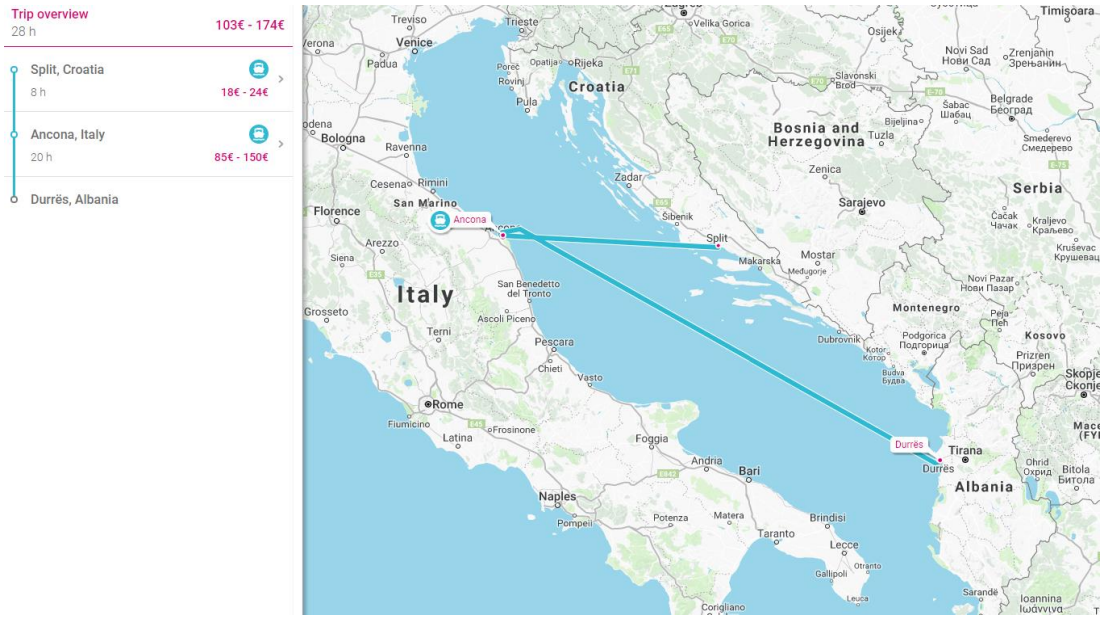


Figure 89: Maritime connectivity Split - Durres, Source: romeo2rio.com

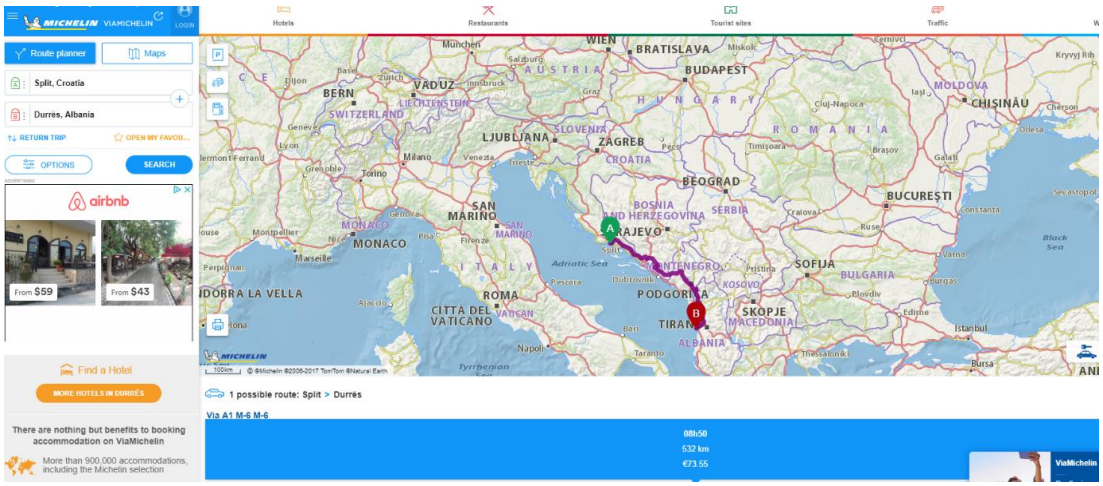


Figure 90: Road connectivity Split - Durres, Source: viamichelin.com

Table 27: Trip characteristics by mode, Split – Durres

	Total travel time	Transfer time	transfers	cost
Maritime	***28h***	-	***1***	***174***
Road	8h 50min	-	-	74

4.7.7 Croatia coastal areas (ind. to Split) – Belgrade (SB)

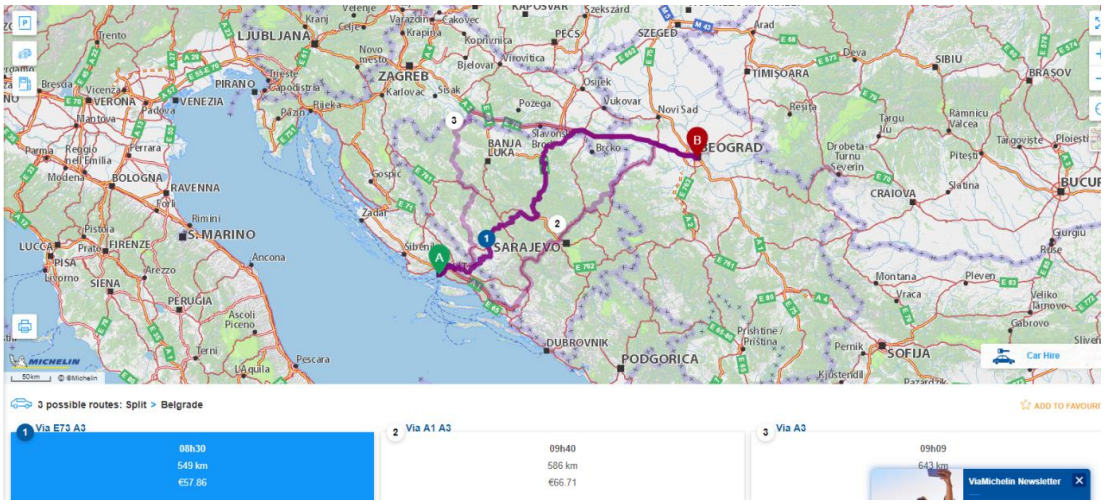


Figure 91: Road connectivity Split - Belgrade, Source: viamichelin.com

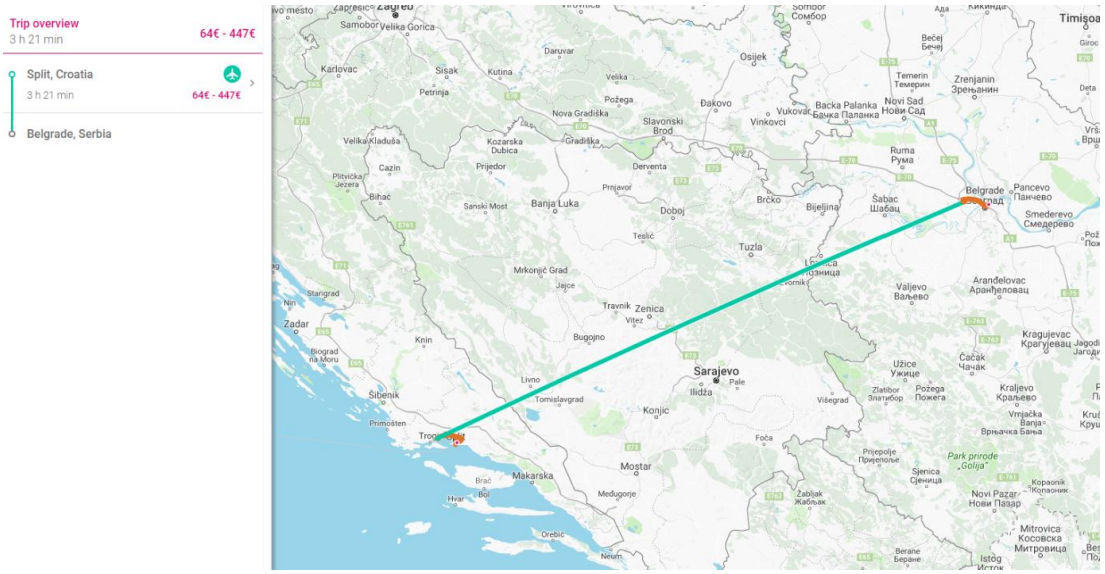


Figure 92: Air based connectivity Split - Belgrade, Source: romeo2rio.com

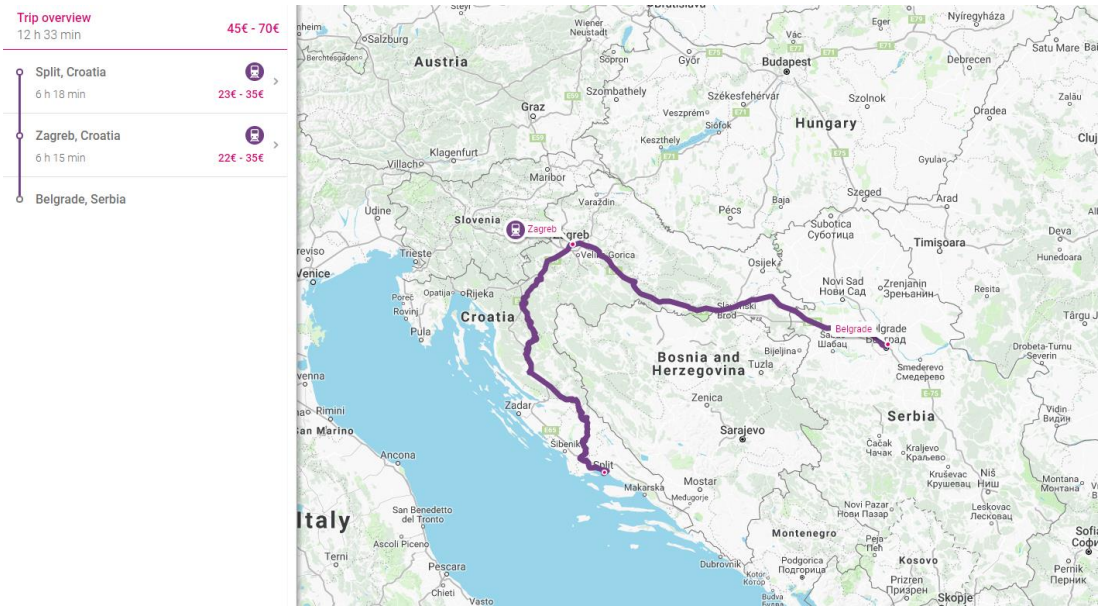


Figure 93: Rail connectivity Split - Belgrade, Source: romeo2rio.com

Table 28: Trip characteristics by mode, Split – Belgrade

	Total travel time	Transfer time	transfers	cost
Rail	***12h 33min***	**-**	***1***	***70***
Road	8h 30min	-	-	58
Air	3h 21min	-	-	447

4.8The case of Ljubljana, SI

4.8.1 Slovenia coastal areas (ind. to Piran) – Igoumenitsa (GR)
(as Igoumenitsa – Piran)

4.8.2 Slovenia coastal areas (ind. to Piran) - Bologna (IT)
(as Bologna - Piran)

4.8.3 Slovenia coastal areas (ind. to Piran) - Trieste (IT)
(as Trieste - Piran)

4.8.4 Slovenia coastal areas (ind. to Piran) – Croatia coastal areas (ind. to Split)
(as Split - Piran)

4.8.1 Slovenia coastal areas (ind. to Piran) – Bar (ME)

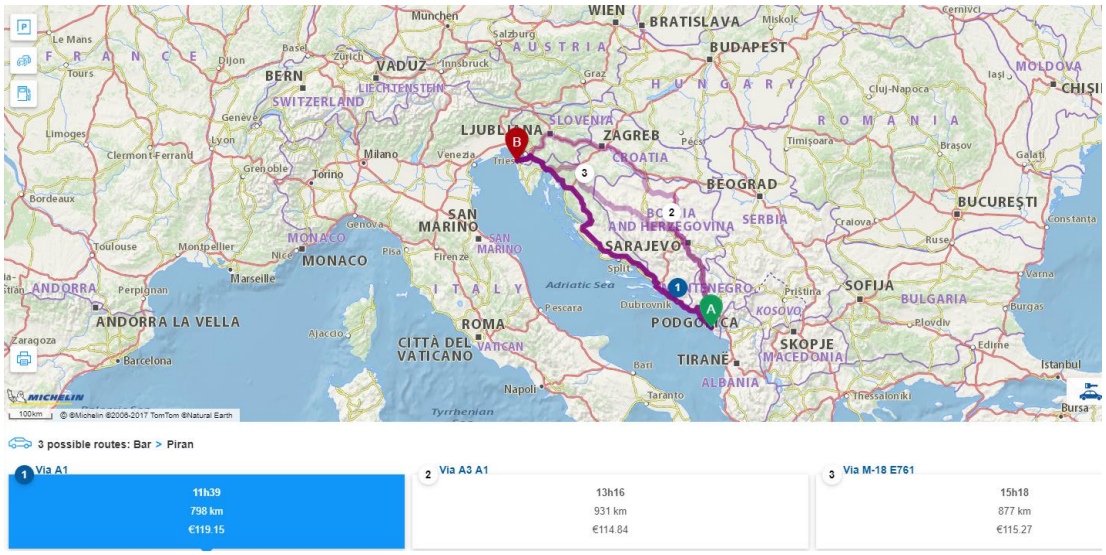


Figure 94: Road connectivity Piran - Bar, **Source: viamichelin.com**

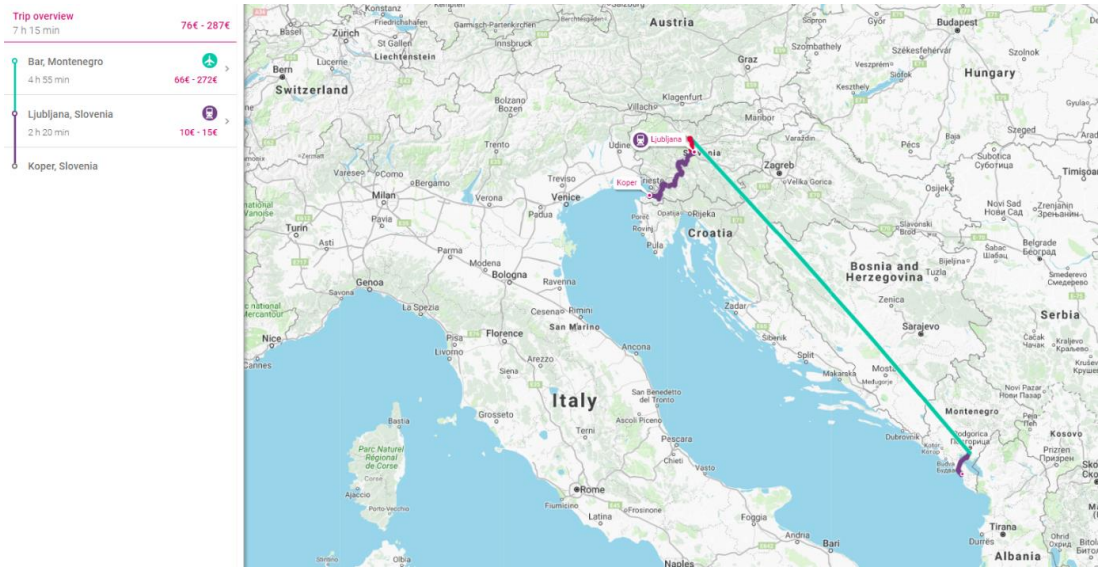


Figure 95: Air based connectivity Piran - Bar, Source: romeo2rio.com

Table 29: Trip characteristics by mode, Piran – Bar

	Total travel time	Transfer time	transfers	cost
Multimodal / rail& air based	7h 15min	-	2	287
Road	11h 9min	-	-	120

4.8.2 Slovenia coastal areas (ind. to Piran) – Durres (AL)

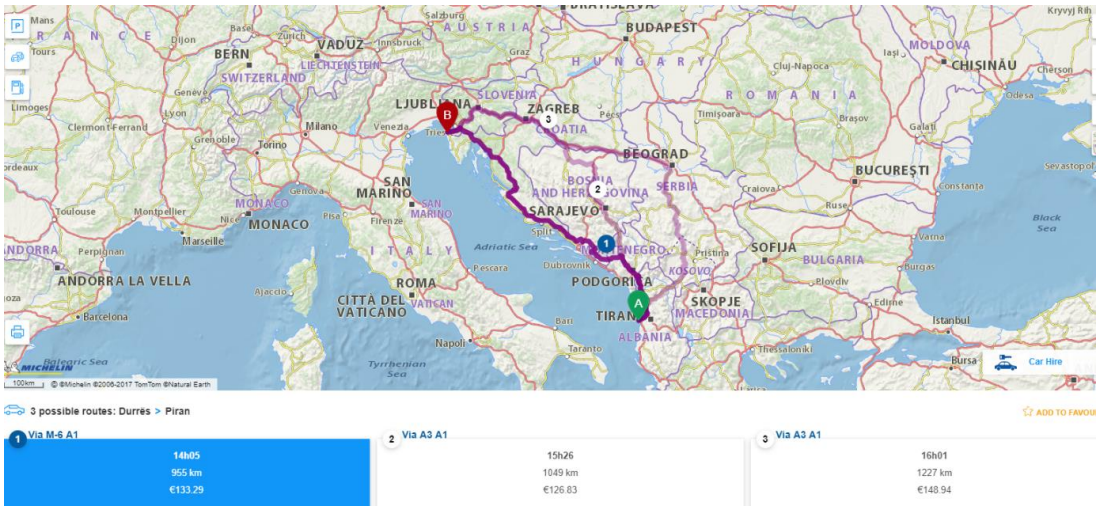


Figure 96: Road connectivity Piran - Durres, Source: viamichelin.com

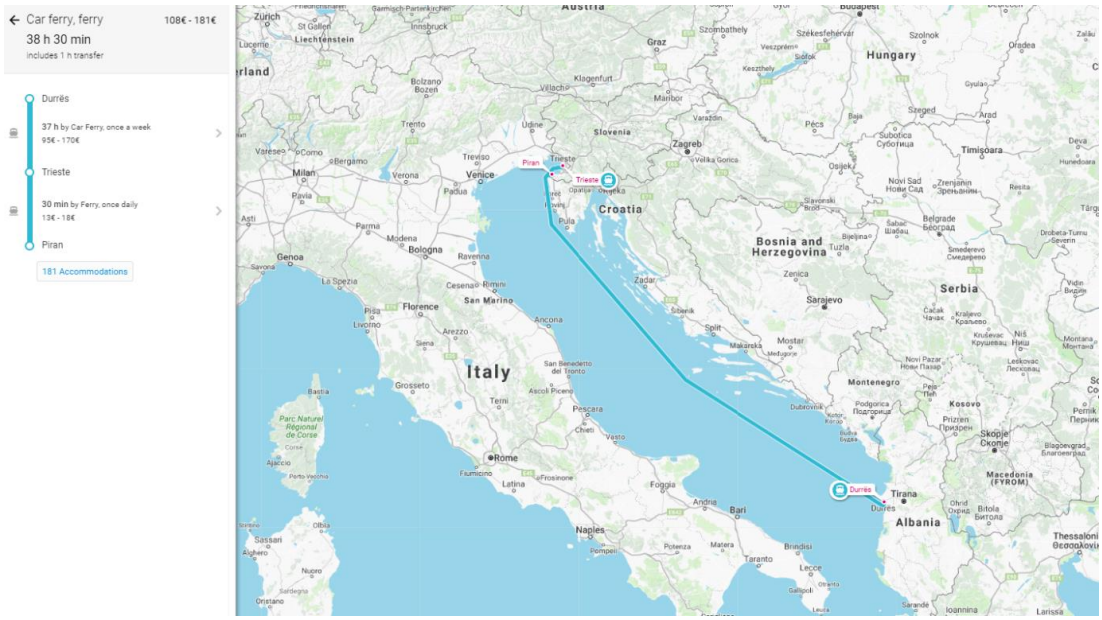


Figure 97: Maritime connectivity Piran - Durres, Source: romeo2rio.com

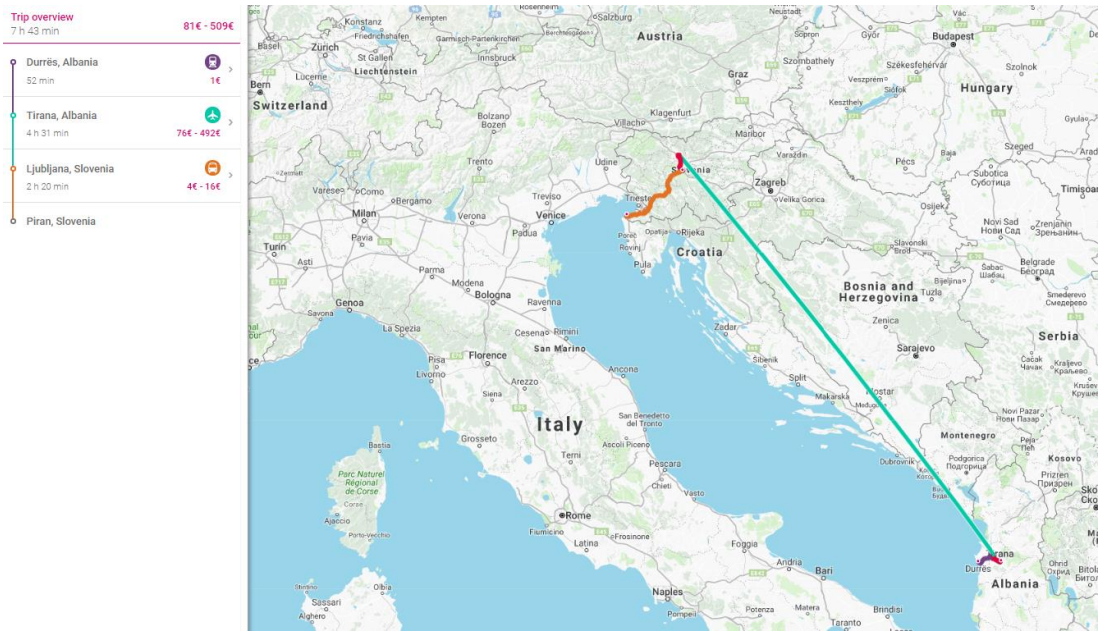


Figure 98: Air based connectivity Piran - Durres, Source: romeo2rio.com

Table 30: Trip characteristics by mode, Piran – Durres

	Total travel time	Transfer time	transfers	cost
Multimodal/ maritime based	***38h 30min***	***1h***	***1***	***181***
Multimodal/ air based	7h 43min	-	3	509
Road	14h 5min	-	-	134

4.8.3 Slovenia coastal areas (ind. to Piran) – Belgrade (SB)

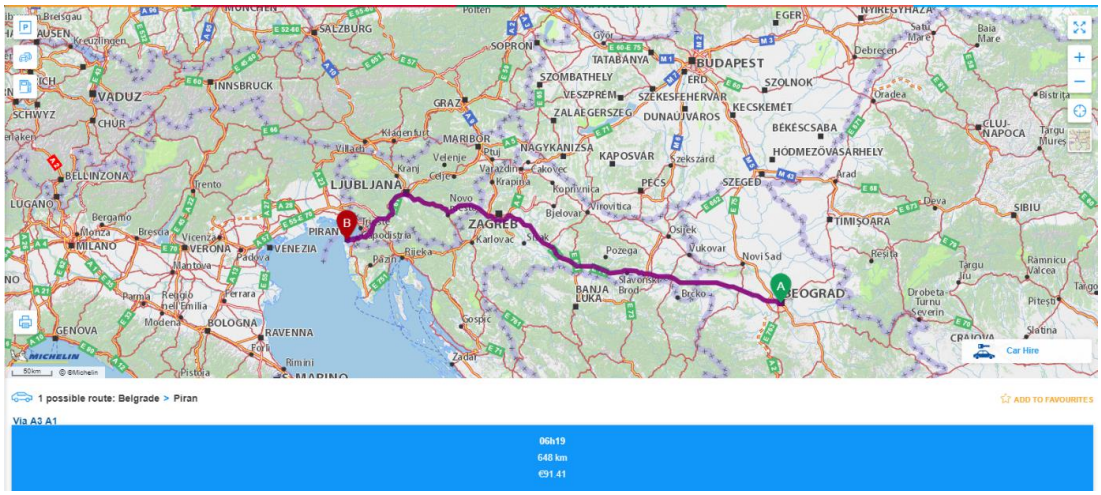


Figure 99: Road connectivity Piran - Belgrade, Source: viamichelin.com

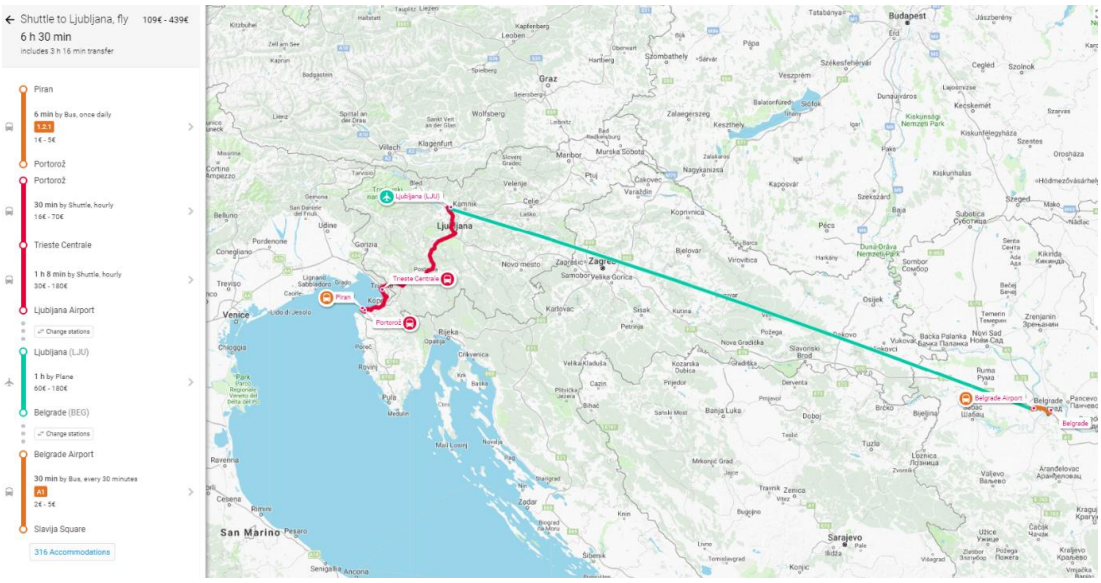


Figure 100: Air based connectivity Piran - Belgrade, Source: romeo2rio.com

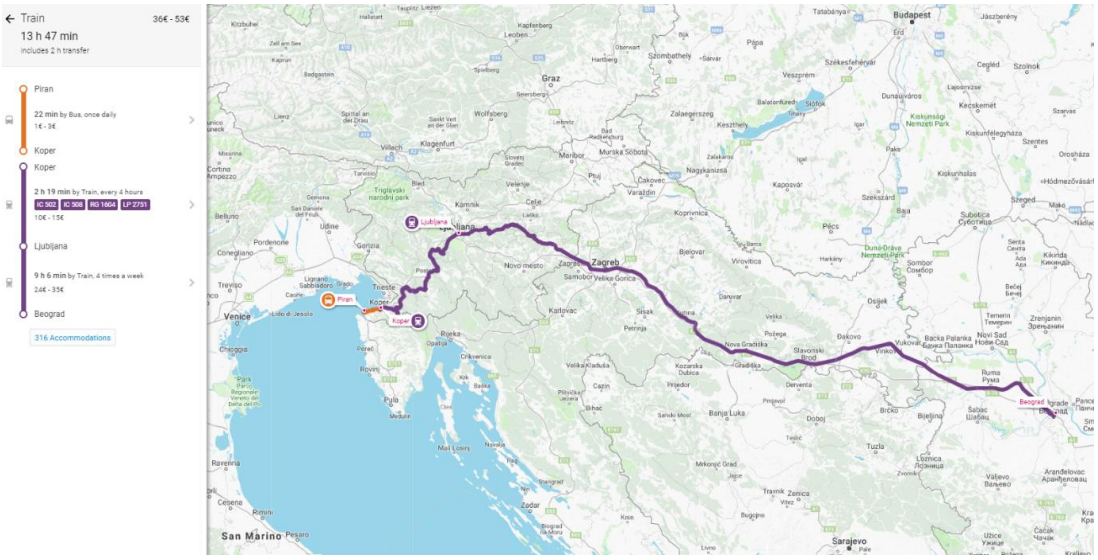


Figure 101: Rail connectivity Piran - Belgrade, Source: romeo2rio.com

Table 31: Trip characteristics by mode, Piran – Belgrade

	Total travel time	Transfer time	transfers	cost
Multimodal/ rail based	***13h 47min***	***2h***	***2***	***53***
Multimodal/ road+ air based	6h 30min	3h 16min	3	439
Road	6h 9min	-	-	92

4.9The case of Bar, ME

4.9.1 Bar (ME) – Igoumenitsa (GR)

(as Igoumenitsa – Bar)

4.9.2 Bar (ME) - Bologna (IT)

(as Bologna - Bar)

4.9.3 Bar (ME) - Trieste (IT)

(as Trieste - Bar)

4.9.4 Bar (ME) – Croatia coastal areas (ind. to Split)

(as Split - Bar)

4.9.5 Bar (ME) – Slovenia coastal areas (ind. to Piran)

(as Piran - Bar)

4.9.6 Bar (ME) – Durres (AL)

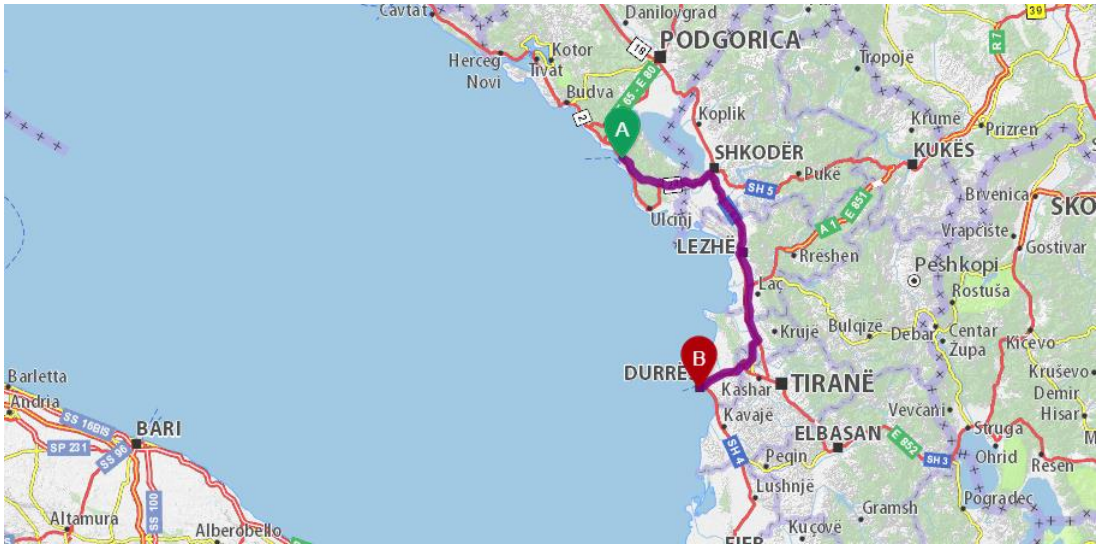


Figure 102: Road connectivity Bar - Durres, Source: viamichelin.com

Table 32: Trip characteristics by mode, Bar – Durres

	Total travel time	Transfer time	transfers	cost
Road	2h 51min	-	-	20

4.9.7 Bar (ME) – Belgrade (SB)

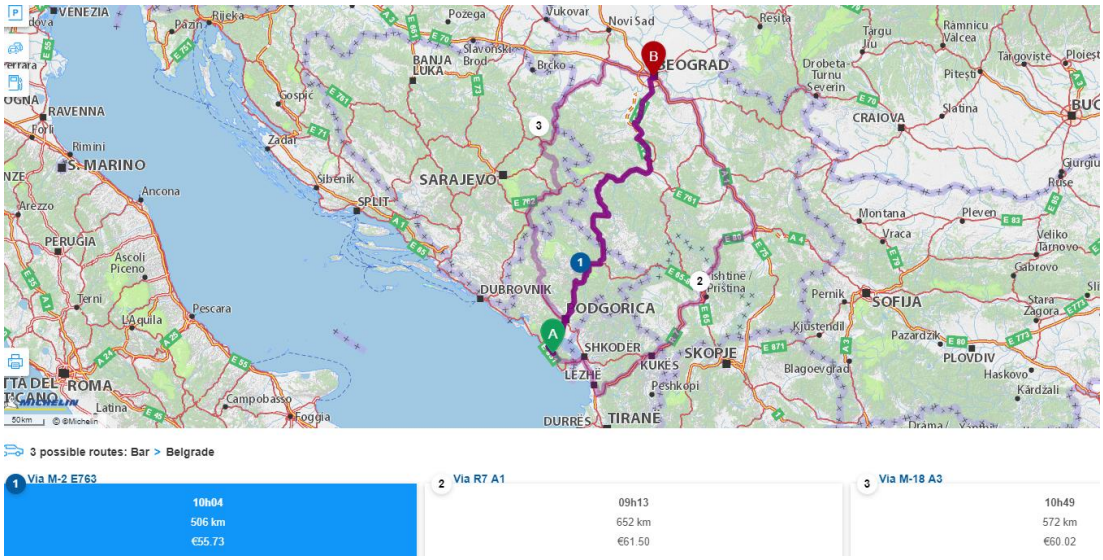


Figure 103: Road connectivity Bar - Belgrade, Source: viamichelin.com

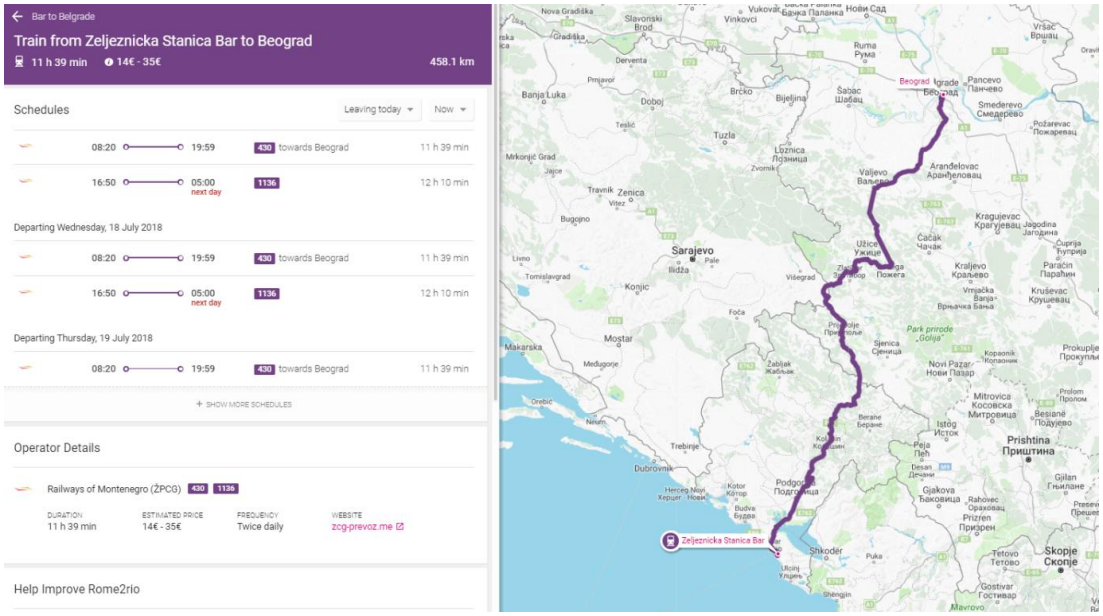


Figure 104: Rail connectivity Bar - Belgrade, Source: romeo2rio.com

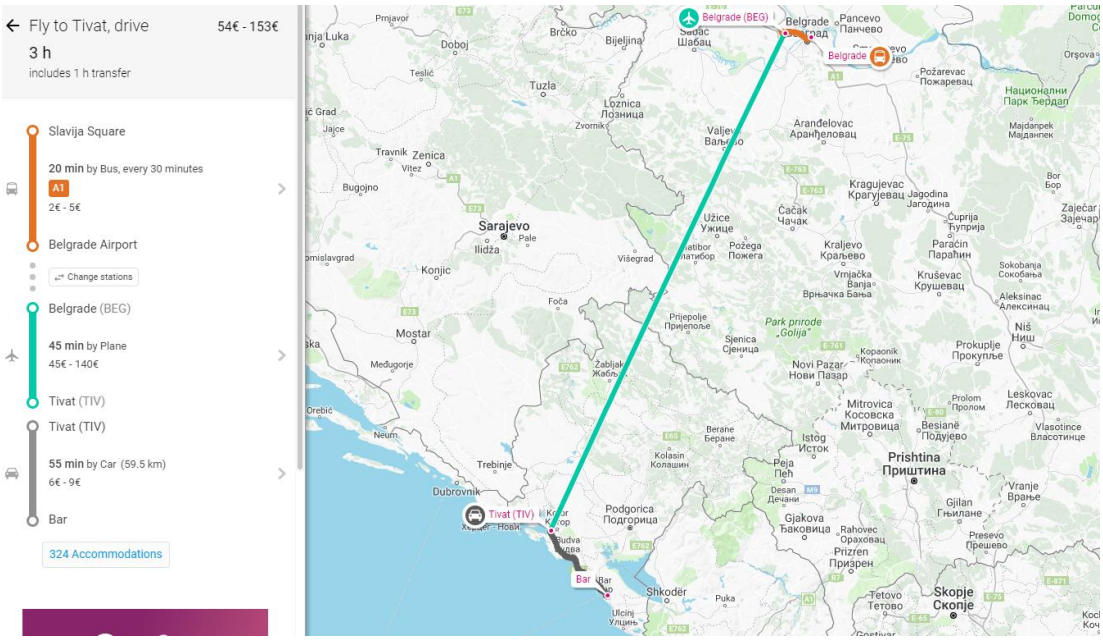


Figure 105: Air based connectivity Bar - Belgrade, Source: romeo2rio.com

Table 33: Trip characteristics by mode, Bar – Belgrade

	Total travel time	Transfer time	transfers	cost
Rail	***11h 39min***	-	-	***35***
Road	10h 4min	-	-	56
Multimodal / air based	3h	1h	2	153

4.10 The case of Durres, AL

4.10.1 Durres (AL)– Igoumenitsa (GR)
(as Igoumenitsa – Durres)

4.10.2 Durres (AL) - Bologna (IT)
(as Bologna - Durres)

4.10.3 Durres (AL) - Trieste (IT)
(as Trieste - Durres)

4.10.4 Durres (AL) – Croatia coastal areas (ind. to Split)
(as Split - Durres)

4.10.5 Durres (AL) – Slovenia coastal areas (ind. to Piran)
(as Piran - Durres)

4.10.1 Durres (AL) – Bar (ME)

(as Bar - Durres)

4.10.2 Durres (AL) – Belgrade (SB)

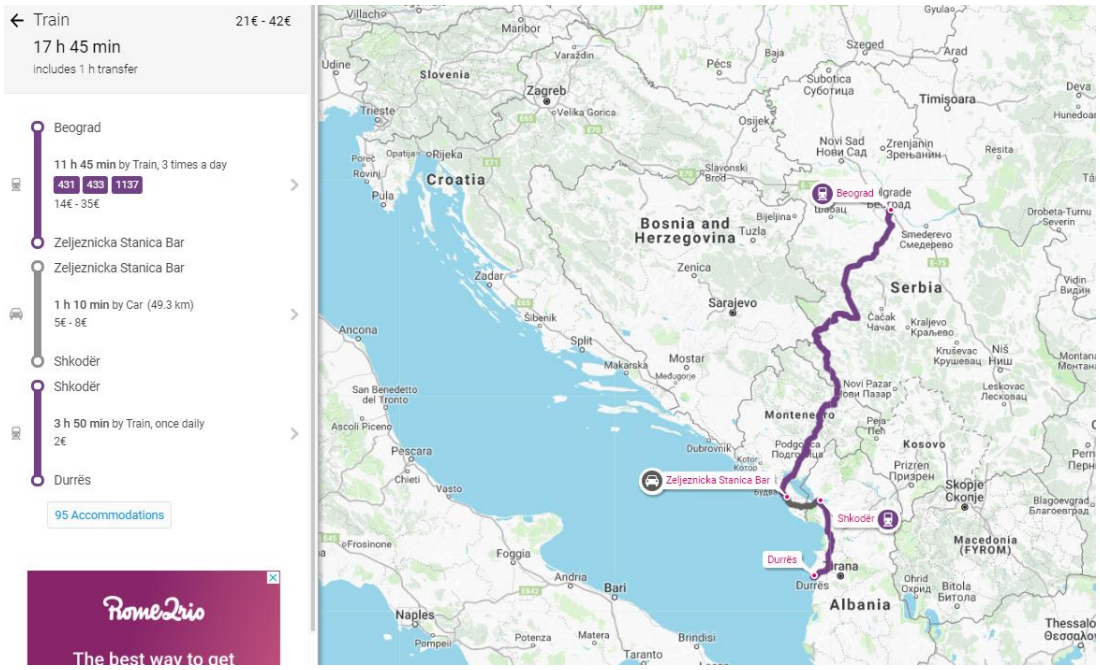


Figure 106: Rail connectivity Durres - Belgrade, Source: romeo2rio.com

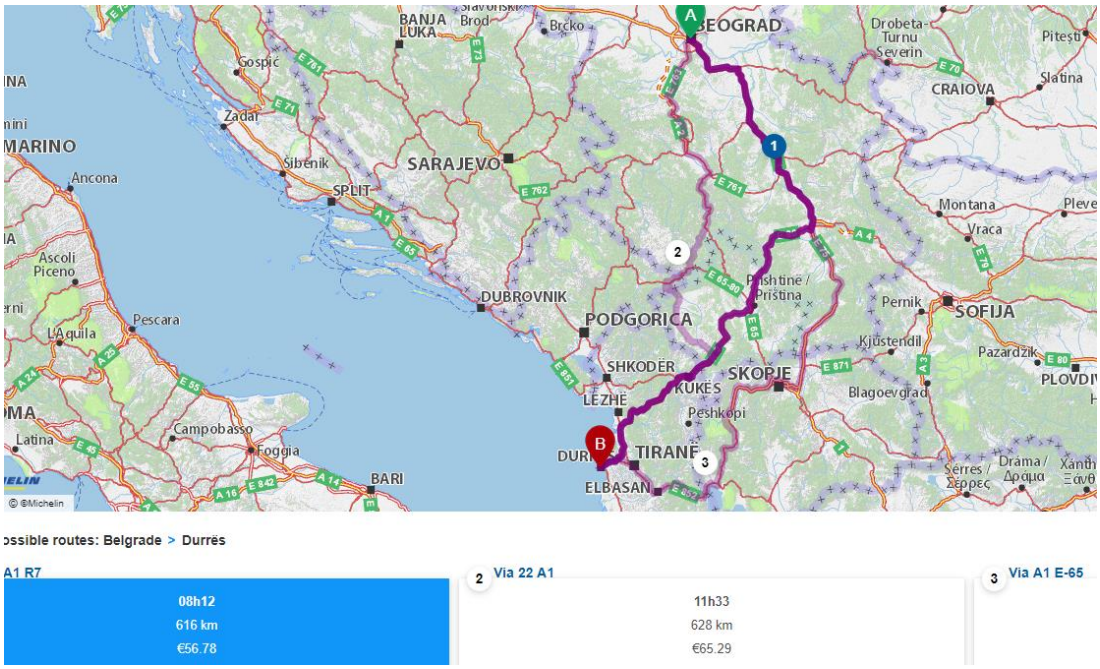


Figure 107: Road connectivity Durres - Belgrade, Source: viamichelin.com

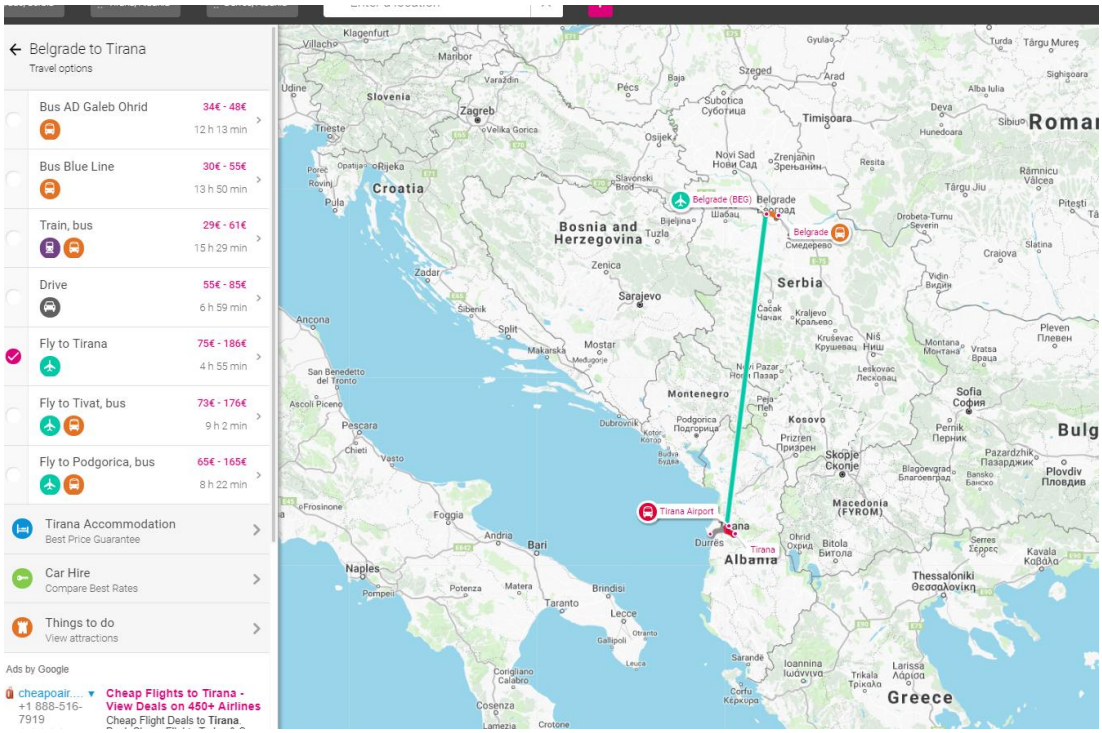


Figure 108: Air based connectivity Durres - Belgrade, Source: romeo2rio.com

Table 34: Trip characteristics by mode, Durres – Belgrade

	Total travel time	Transfer time	transfers	cost
Rail	***16h 43min***	-	***2***	***44***
Road	8h 12min	-	-	57
Air	4h 55min	2h 55min	2	186

4.11 The case of Belgrade, SB

4.11.1 Belgrade (SB) – Igoumenitsa (GR)
(as Igoumenitsa – Belgrade)

4.11.2 Belgrade (SB) - Bologna
(as Bologna - Belgrade)

4.11.3 Belgrade (SB) - Trieste (IT)
(as Trieste - Belgrade)

4.11.4 Belgrade (SB) – Croatia coastal areas (ind. to Split)
(as Split - Belgrade)

4.11.5 Belgrade (SB) – Slovenia coastal areas (ind. to Piran)
(as Piran - Belgrade)

4.11.1 Belgrade (SB) – Bar (ME)

(as Bar - Belgrade)

4.11.2 Belgrade (SB) – Durres (AL)

(as Durres - Belgrade)