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1 Introduction to the promotion of rail and maritime passenger's intermodality

In this first paragraph a general introduction to the key dimensions of passengers intermodality promotion measures and solutions is provided. Starting from a literature and general overview of this topic, the analysis continues into Inter-Connect specific contributions to the issue defining the common methodology and the assessment framework used for the evaluation of the eight Inter-Connect case studies.

1.1 Rail and maritime intermodality promotion: a general definition of the topic

In recent years, transport planning has paid more attention to sustainable modes of transport to minimize the impact on the environment of motorized transport and improve sustainable passenger mobility. A sustainable transport system must consider the needs of all travellers within a specific area, trying to provide the best travel conditions for all users. Today sustainable mobility is a viable solution to balance people's movement needs with environmental protection. Sustainable mobility includes all means of transport that can reduce the negative impacts of traffic. The sustainable mobility factors to be considered are economic (productivity, operational activities, employment, etc.), social (quality of life, citizen participation, etc.) and environmental (emissions, climate change, biodiversity, environmental protection, etc.).
Intermodality, as part of sustainable mobility, aims at improving the efficiency and attractiveness of a journey made combining more than one mode of transport (e.g. on foot, by train and by bus) offering a seamless experience for travellers. This requires the creation of integrated transport systems through the harmonization of different transport services and the creation of integrated links between the different modes. Integrated planning of a transport system refers to collaboration and joint work among different public and private organizations to develop and implement specific measures and/or plans. This cooperation may involve aligning objectives and policies, sharing knowledge, data, resources, funding and share powers between different organizations.
In general, the idea of intermodality aims to optimize travel conditions by minimizing the negative impacts that each transport solution may have on the environment, particularly in congested urban areas. Weak public transport connections within urban area and hinterland can lead to a shift of users from sustainable transport solutions to other more pollutant modes (mainly private vehicles).
Enhancing sustainable intermodal connectivity solutions can improve travel and communications across the country revitalizing local economies mainly in rural areas, where rapid aging has often consequences on population decline and weakening of economic activities. In addition to road transport, which guarantees the connection of rural areas with urban centres, intermodal rail and maritime transport have be considered. These represent valid sustainable mobility solutions, capable of guaranteeing transport of people. The intermodal transport solution is considered as the "weak" link in the chain of a combined transport system. For this reason, the role of intermodal stations is fundamental for the proper functioning of an effective intermodal transport chain. In fact the main objective of an intermodal passenger terminal (usually train and bus stations and ports) is a safe and fast transfer between various transport networks and different modes of transport.
In order to ensure the effectiveness of these intermodal function, a transport terminal should provide:

- A reliable and adequate level of public transport services for all travellers;
- Intermodal travel costs with an adequate price compared to other less sustainable transport solutions;
- Adequate accessibility for all users, both commuters and tourists;

- Harmonization of the different timetables in order to reduce the time lost waiting the following transport solution.
- high comfort and safety standards.

All these topics are included into the transport policies developed by the European Union with the aim to ensure an efficient, safe and free movement of people across the EU, through an integrated network that exploits all modes of transport and allowing to reduce the impact of the passengers sectors on environment.
Transport policy is one of the Union's most important policy area, governed by Title VI (Articles 90 to 100) of the Treaty on the Functioning of the EU. In the White Paper - Roadmap towards a single European transport area - Towards a competitive and efficient transport system as for resources (COM (2011) 144 final of 28 March 2011) – the EU established 40 specific action points and listed 131 concrete initiatives to build a competitive transport system that will remove major bottlenecks and move people efficiently and safely across the European Union. The proposals should reduce the EU's dependence on imported oil, achieve substantially CO2-free urban mobility in major urban centres by 2030 and reduce transport carbon emissions by 60% by 2050. Several of these actions directly refers to the promotion of rail and intermodal transport solutions.
In relation to the railway sector, Directives 2012/34 / EU, establishing a single European railway area, and the opening of the market for national passenger transport services. Great importance is given to the governance of the railway infrastructure, aimed to improving the quality of the railway infrastructures by stimulating competition, strengthen market surveillance and improve conditions for investments in the sector.
Finally, in order to promote an interconnected and more efficient EU transport system, the Directive 2010/40 / EU defines standards for the deployment of intelligent transport systems (ITS). It aims to encourage the development of innovative transport technologies to create intelligent transport systems This objective will be achieved by introducing common EU standards and specifications.

1.2 The role of the Inter-Connect project in the rail and maritime intermodality promotion in the ADRION area

The EU regional strategy for the Adriatic and Ionian Region (called "EUSAIR") approved by the European Council in 2014, illustrates the needs and potential of a smart, sustainable and inclusive growth of the Region and provides a general framework with relative action plans to address challenges and opportunities, through cooperation between EU countries. The implementation program promotes an innovative concept of territorial development, with the main objective of promoting the economic and social growth of the area.
The EUSAIR Strategy has as its main objective the promotion of the socio-economic prosperity of the Region through economic-productive growth, the creation of jobs, the improvement of the attractiveness, competitiveness and connectivity, while preserving the environment and ensuring the health of marine and coastal ecosystems. The development of efficient transport systems in urban areas has today become increasingly complex due to city congestion and urban expansion. Consequently, the role of public authorities is of fundamental importance for territorial planning, for the financing of programs, and to guarantee an exhaustive regulatory framework.
The Inter-Connect objectives are directly linked to the EUSAIR strategy. In fact the Inter-Connect project pursues the promotion of sustainable transport in the ADRION area developing different solutions aimed to promote transport integration among partner states (Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro, Serbia, Slovenia), taking advantage of the rich natural, cultural and human beings that surround the Adriatic and Ionian seas, and reinforce the economic, social and territorial cohesion of the area. The Adriatic and Ionian seas constitute an important crossroads for goods and passengers (figure 1).

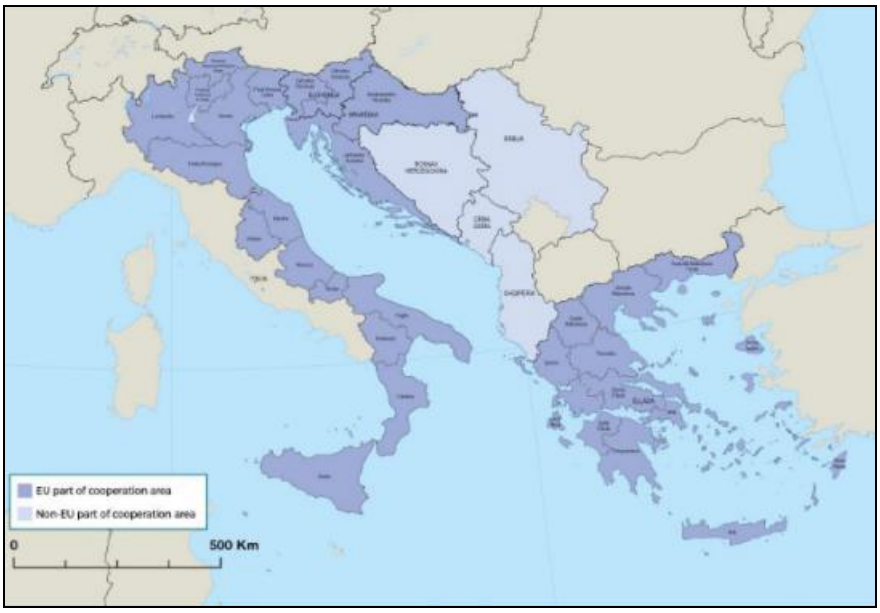


Figure 1: ADRION cooperation area

The ADRION area has significant infrastructural deficits related to accessibility with public transport solutions. In particular rail network, especially in Western Balkans (Albania, Bosnia and Herzegovina, Greece, Montenegro and Serbia) need urgent improvements in order to remove all existing bottlenecks and inefficiencies (source: EUSAIR documents).
In relation to maritime connections, these often are not adequately linked with the inland public transport networks. It is important to improve land-sea connectivity, by developing forms of intermodal transport between ports and cities. This is important also in terms of increase the competitiveness of the inland economy.
The Inter-Connect project aims to promote intermodal passenger transport and to revitalize the use of rail transport in ADRION, through different soft measures capable of reducing the current inefficiencies and problems. In particular, the Inter-Connect project examines the potential for promoting intermodality in 8 regional cases (figure 2), Igoumenitsa (GR), Regione Emilia Romagna (IT), FVG (IT), Ljubljana (SL), Zagreb (CR) , Bar (ME), Durazzo (AL) and Belgrade (RS), with the aim of extracting valuable information (effective measures, cooperation schemes necessary to support the implementation of interventions, potential transferability, financing schemes for the realization of actions) able to be used also in other sectors and to be generalized in order to improve the connectivity of ADRION.

Figure 2: Inter-Connect cases

The Inter-Connect project promoted rail and maritime intermodality working on three different project dimensions: soft measures (measures working on increasing the efficiency of existing services and infrastructures without big investments), major measures (measures where relevant public investments on infrastructures are requires) and administrative/governance measures (figure 3).

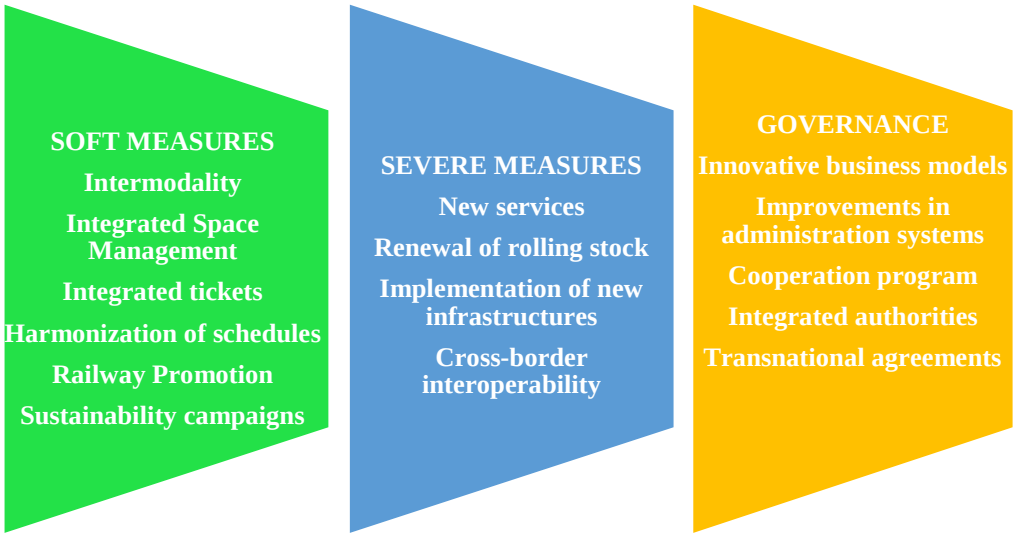


Figure 3: **Interaction of various groups of measures in the sectors of sustainable mobility**

Each partner had developed ideas and projects concerning their area or country, capable of supporting and encouraging the railway use and intermodal passenger transport solutions, with attention to intermodal solutions able to revitalize coast-inland connections. To this end, the Inter-Connect project follows a bottom-up approach ("bottom-up" approach) to verify that the interested entities place their weaving towards cooperation aimed to overcoming legal, infrastructural and operational barriers, and to provide better intermodal solutions for maritime and rail passengers. The potential interventions to promote intermodality in the 8 Inter-Connect case studies are examined from the regional / local point of view in order to identify strengths/weaknesses, cooperation and funding schemes and all the

valuable information for the development and implementation of the project itself, also evaluating the transferability potential in another ADRION areas with similar characteristics.

The Inter-Connect case studies' specific objectives are:

- Increase efficiency and reduce the environmental impacts of transport systems, in particular by providing alternative, sustainable and environmentally friendly solutions;
- Improvement of the competitive profile of public transport;
- Facilitate the creation of synergies between transport operators;
- Creation of increasingly integrated rail services at local and transnational level;
- Increase the number of passengers (tourists and commuters) using railway and sustainable transport solutions;
- Support port-rail connections.

2 Assess the effectiveness of the rail and maritime intermodality solutions: the key aspects

In this paragraph a brief introduction to the project areas and pilots are provided in order to better define the different contexts and main objectives on which the Inter-Connect project is working.

2.1.1 The Igoumenitsa case study, Greece

Description of the current status

Due to the positioning of Igoumenitsa in western Greece (figure 4), the lack of an airport capable of serving flights to/from the cities of the ADRION area, and the lack of connections with the main Greek railway network, road transport is still the most effective transport solution, even if road transport infrastructures needs of consistent improvements. Public transport within the city has poor features and therefore the need to support bus lines is essential.

Figure 4: The (Greek part of) catchment area of Igoumenitsa in Inter-Connect project

Igoumenitsa is not currently served by the railway, although for years there have been plans for the development of the Egnatia railway axis. Therefore, the only public transport mode able to satisfy local and cross border passengers needs, although with relatively low performances, are intercity buses. In addition, the low level of adoption of new technologies and the absence of integrated public transport services (in terms of ticketing, information, harmonization of timetables) further hinder the growth and development of the area.

The examination plan

The main critical issues for Igoumenitsa, and therefore for the project, are:

- act as an area of tourist attraction and not only serve as a transit point for international tourists (mainly coming from Italian ports). This transformation needed can be based on promotion of existing attractive sites, points of interest, the promotion of natural areas and an improvement

of public transport services connecting them (accompanied by an offer of integrated tour packages, etc.);
- attracting domestic tourist flows creating new synergies with the Municipality of Ioannina (associated partner of Igoumenitsa), as the main centre of tourist attraction in Epirus, and take joint actions to mutually support tourism growth in the area, a better connection with the hub of Thessaloniki as the main railway gate of northern Greece for international and national rail connections.

Based on these challenges, the case of Igoumenitsa in the Inter-Connect project concern:
- analysis of flows within the river basin;
- understanding the growth opportunities of the city (both in terms of daily city performance and to attract tourists from and outside Greece);
- identification of the latent public transport demand;
- examination of cooperation programs between intercity bus service providers, the city of Igoumenitsa, the port of Igoumenitsa, the associations and companies (mobility and tourism) of the city and its catchment area.

Finally, the Greek case will also examine the opportunities and challenges related to the transnational connectivity of Igoumenitsa with the ADRION coastal areas (not only Italian) but also with Croatian, Slovenian and Albanian destinations through new maritime services.

2.1.2 The Emilia-Romagna Region case study, Italy

Description of the current status

The Emilia-Romagna Region (figure5) with the support of ITL (Institute for Transport and Logistics) aims to improve rail passenger transport in the Bologna and Romagna areas in order to improve the accessibility of coastal areas (Romagna - provinces of Ravenna, Forlì -Cesena and Rimini) with the regional main transport hub (Bologna).

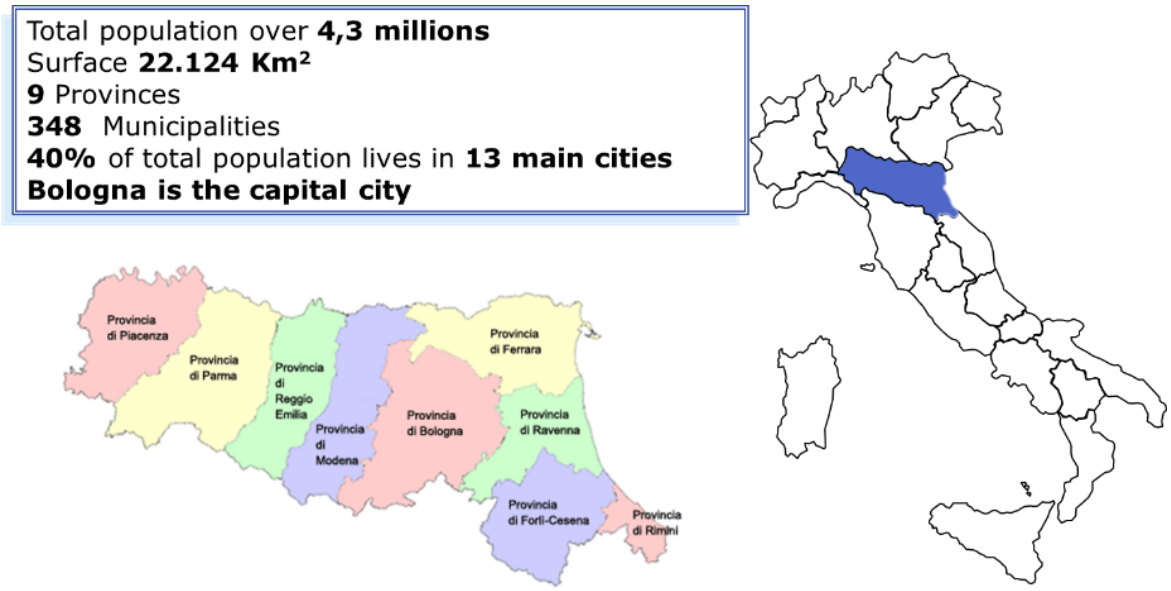


Figure 5: Emilia-Romagna overview (2016)

The examination plan

Considering the focus of Inter-Connect project, the case study of the Emilia-Romagna Region considers the following aspects:

- improve passenger rail transport, mainly with soft actions and with particular attention to coast-to-internal connections.
- tackle the seasonality of passengers flows in the Emilia-Romagna costal area (Riviera Romagnola);
- define better public transport solutions both for summer period (tourists) and winter period (commuter) trying to get better rail transport for both types of users;
- improve the quality of public transport offer for tourists through the promotion on new services of integrated ticketing.

Passenger rail transport can be improved with a series of different actions in various regional areas. Inter-Connect will focus on a subset of the Emilia-Romagna regional network (figure 6). The analysis is conducted thanks to two different case studies (A and B).

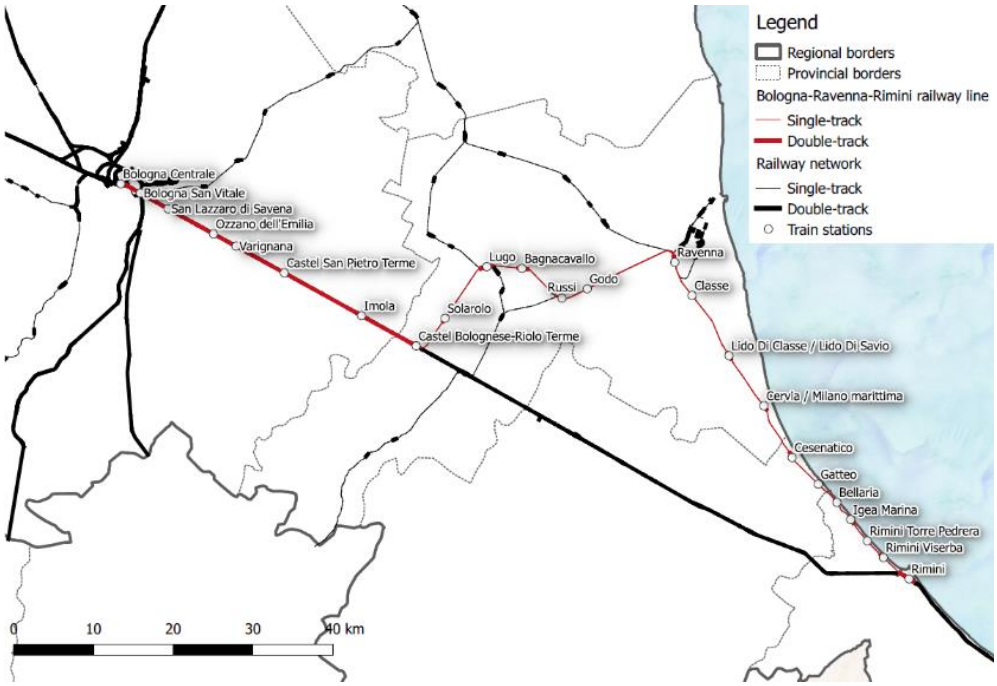


Figure 6: Bologna-Ravenna-Rimini railway line

Case study A main objective is to fasten the rail connection among Bologna, Ravenna and Rimini without big infrastructure investments. In fact, the travel time from Bologna to Ravenna and Rimini in the past 10 years have not improved. Among the main destinations from Bologna, Ravenna is the closest in terms of travel distance, but the furthest in terms of travel time. Moreover, connection with other cities reduced travel time whereas Ravenna only partially did (4 services per days are faster than in 2008 and 16 are longer than 2008).

Case study B main objective is to test a solution of bus and train ticketing integration in Romagna area. In fact, given the tourist vocation of this area, in recent year local authorities have communicated the need to improve public transport for tourists as a key measure to reduce negative externalities (e.g. congestion, environmental impact, road safety, etc.). This pilot is possible thanks to the collaboration of the local public transport operator (the Inter-Connect associated partner *Start Romagna*), the local

transit agency of the Romagna area (eastern Emilia-Romagna) which includes the provinces of Ravenna, Rimini and Forlì-Cesena and *Trenitalia*, the national rail company.

2.1.3 The Ljubljana metropolitan area case study, Slovenia

Description of the current status

Slovenia is connected through maritime services with the Italian ports of Trieste and Venice, while it is connected to Europe through Greece and Albania, with long travel times. As for the train service beyond Trieste (figure 8), it is possible to connect with Split (Croatia) and Belgrade (Serbia) with reduced times. The best alternative to sustainable means only road transport, as air transport, due to high costs, is not an efficient means of transport.

Figure 7: The public railway infrastructure network in the Republic of Slovenia

The state of public railway infrastructure in Slovenia is mainly characterized by:
- insufficient investments devoted to the development of the public railway infrastructures in the last 15 years;
- the public railway infrastructure network is less competitive compared to neighbouring countries in the north and west borders;
- insufficient investments in railway vehicles (renewal and purchase of new vehicles);
- the motorization of Slovenians has reached very high levels, reducing the attractiveness of public transport solutions;
- the vignette system promotes car transport mode;
- problems in developing efficient integrated public passenger transport system (slow implementation of transport policy).

The examination plan

The action plan for the Inter-Connect project start in defining the bottlenecks of the rail network and design solutions to improve rail passenger transport and better links between the various forms of transport in Slovenia. It will focus on improvements to international connections. With better

accessibility with neighbouring countries, the case study identifies solutions allowing to improve the intermodal trips in the whole Ljubljana metropolitan area. Furthermore, it will consider the planned interventions, carry out the critical evaluation and propose urgent actions to make rail passenger transport competitive again.

The examination plan addresses the problem at two levels:
- Technical solutions for upgrading the railway network;
- Improvements to the institutional and managerial environment.

2.1.4 The Friuli-Venezia-Giulia Region case study, Italy

Description of the current status

The Friuli-Venezia-Giulia Region case studies developed by CEI and focused on the Trieste area has been implemented with the involvement of the Autonomous Region of Friuli-Venezia-Giulia (Associated Partner) and other local stakeholders including Public transport operators. The case studies focuses on improving multimodal public transport in the region, with particular attention to maritime services and their intermodal connections with the Trieste railway/public transport. This priority was developed also in others EU project as EA SEA-WAY project, co-financed by the CBC IPA-Adriatic program, through which it has implemented new maritime services between Trieste, Piran (Slovenia), Rovinj (Croatia) and Pula (Croatia).
The routes between Trieste and Istria are of particular importance, as in addition to having a tourist value, it strengthens cross-border relations between Italy, Slovenia and Croatia. The maritime connections are considered an important opportunity for territorial promotion.

The examination plan

The objective of the Friuli-Venezia-Giulia case study in Inter-Connect project is to support further improvements in intermodal connections and accessibility that pivot on the existing connections of maritime services in Trieste. Following the analysis carried out and the feedbacks received from the interested parties, it was possible to elaborate a dual case study for the Trieste area.
The first one (sub-case) focuses on improving urban public transport connections with the maritime passenger terminal, mainly with regard to passengers visiting Trieste (thus allowing better accessibility to the main tourist sites).
The second one (sub-case B) is facing another priority of the Friuli-Venezia-Giulia Region related to better understand the potential (and existing demand) of a new maritime public transport link from Trieste (Muggia) to Koper (Slovenia), also considering the important cross-border commuter flows and the lack of an efficient cross-border public transport links between these two cities (figure 7).

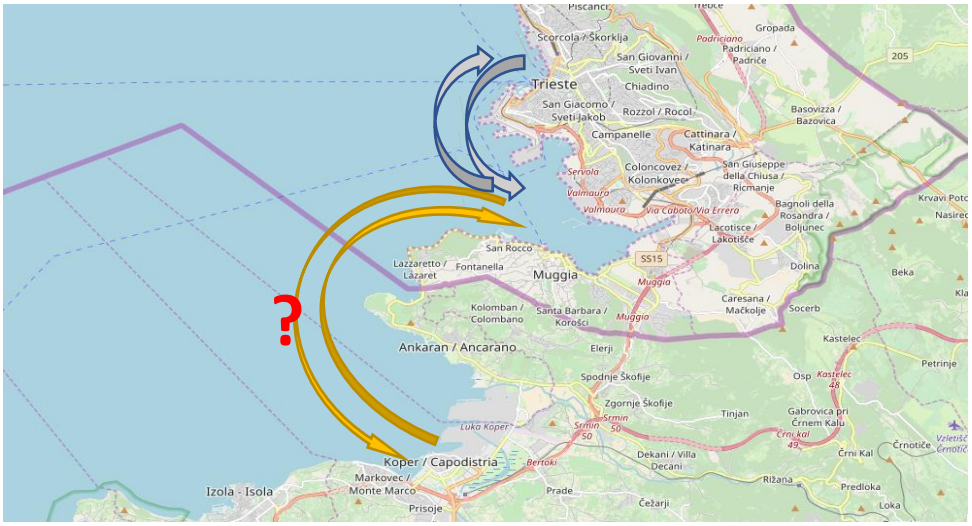


Figure 8:The existing PT maritime service Trieste-Muggia and the potential extension Muggia – Koper

Furthermore, it should be emphasized that this could be seen as an additional connection within a wider range of maritime connections including, together with seasonal services mainly related to tourism purposes, also the current Trieste-Muggia service (operated throughout the year). Furthermore, it is to develop an integrated approach to cross-border mobility by promoting the development of sustainable multimodal solutions (rail / bus / waterway transport / bicycle sharing). This approach can be effectively implemented by capitalizing on previous projects/initiatives but also by acting in synergy with those in progress, as also including sustainable urban mobility plans (SUMPs) developed or implemented in the main centres of the cross-border area.

2.1.5 The Zagreb metropolitan area case study, Croatia

Description of the current status

Most of the tourist travels involving maritime transports in south-east Europe include road transport solutions (main buses) for Italian ports and therefore ships for Greece. This leads to the situation where individual passengers and/or groups of tourists from Croatia travel by bus for hours to the port of Venice, Trieste, Ancona and to Greece ports.

There are railway lines connecting Croatia to Greece, but due to the long distance, travel times (Zagreb or Ljubljana - Athens has about 2-6 changes and 43 hours, Sarajevo - Athens is about 3 changes and 65.5 hours) nowadays the railway is not a reliable and efficient solution. This concerns in particular tourists, who do not want to waste too much time traveling during their holidays.

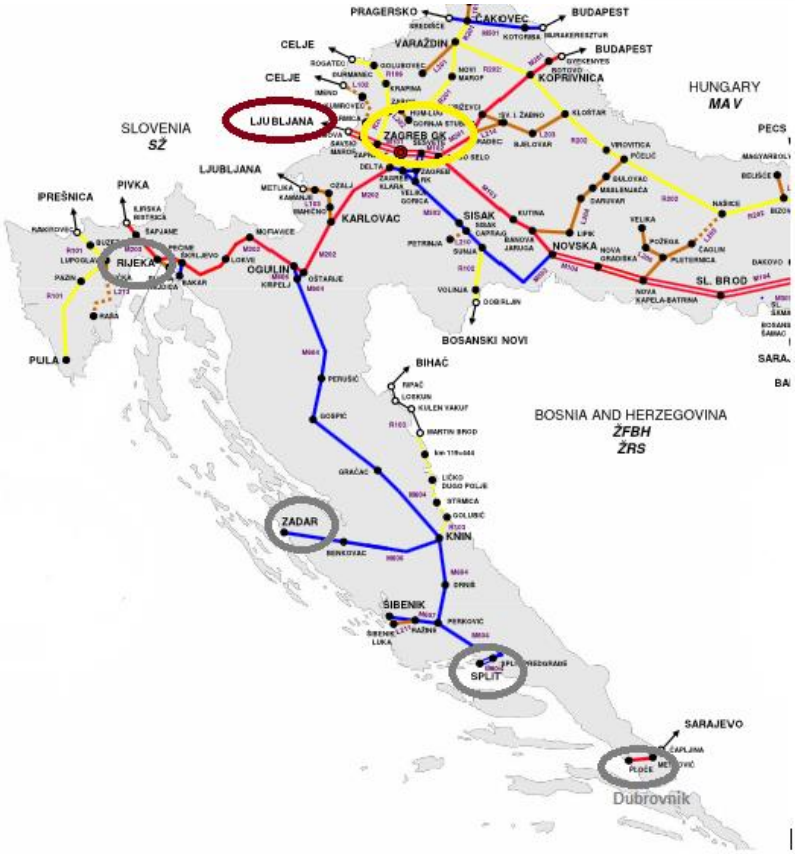


Figure 9: Strategic map of region Croatia

The examination plan

The main purpose of this action plan is to create the bases for its own independent, reliable and automatic system to provide information on timetables, train punctuality and operational changes during journeys (delays, unforeseen events and the like) in stations, on new trains and through others communications channels.

In the Inter-Connect project, the Croatian case study includes a feasibility study covering the entire ADRION area, focusing on improve connections between the Croatian ports and existing transnational trains (Slovenia, Bosnia and Herzegovina) with transnational Croatia-Greece shipping lines. The intention is to explore the possibility of facilitating faster and cheaper trips for tourists by connecting ADRION countries with innovative train and maritime services. The case study aim to find a way to shorten the journey by land, encouraging the use of greener transport and also reduce the journey thanks the maritime services. As a result, travel time and expenses should decrease as well as the environmental impact. The Croatian case study would therefore explore the possibility of this "railway + sea route" solution considering passengers' preferences and travel requirements.

2.1.6 The Port of Bar case study, Montenegro

Description of the current status

Montenegro's maritime connectivity is limited to the Bar-Bari (Italy) connection. The port of Bar is the main port of Montenegro. The passenger terminal in the port of Bar is located in the northernmost part of the port. Although it is officially classified as a passenger terminal, it is actually a ferry terminal or a Ro-Pax terminal. Furthermore, the port of Bar is the final station of the Belgrade-Bar railway. Montenegro is connected only to Serbia (Bar-Belgrade) thanks to a journey lasting 10 hours.
At present, the Bar-Belgrade railway does not meet the modern rail transport requirements in terms of speed and reliability. This situation has led to efforts to initiate the restoration of the railway infrastructure.

Figure 10: Railway network in Montenegro

The road infrastructure, mainly in coastal areas, in summer are congested by tourist flows. Montenegro's road network is generally obsolete and inadequate for fast and efficient road transport. The two main transport axes are East-West (Ulcinj - Herceg-Novi - Croatia, along the Adriatic coast) and North-South, (Serbia - Bijelo Polje - Bar). The connections with the hinterland are of great importance for the ports, but in the case of the port of Bar this is even more true. Being in a sparsely populated region, the port's capacity strongly depends on its connections with the hinterland. Indeed, the current low quality of connections in the hinterland of the Port of Bar is one of the main reasons for the underutilization of the infrastructures and the port facilities. This means that improvements in rail and road connections with the hinterland have a strong impact on the future development of the port.

The examination plan

The Port of Bar case study in the Inter-Connect project covers:

- Identification of intermodal maritime and public transport solutions in the Port of Bar area;
- analysis of passenger flows within the area;
- identification of passenger needs and requests;

- examination of intermodal passenger transport, maritime-bus-rail link to Bar;
- improvement of the role of seaports in the local and regional public transport system and general promotion of reliable alternatives to road transport.

2.1.7 The Durres and Tirana case study, Albania

Description of the current status

Albania has good maritime connections to the rest of the ADRION area thanks to the port of Durres (Durres), connected directly to Piran (Slovenia), Spalato (Croatia), and Italy (Bari). With regard to the railway connection, there are connections only with the city of Belgrade (Serbia), while a freight transport link with Montenegro is planned. Consequently, the most widely used means of transport are cars and the airplane.

The examination plan

The Albanian case study in Inter-Connect project refers to a study on the development and implementation of technological solutions aimed to improve intermodal transport thanks to an improvement of real-time information provision for travellers, the harmonization and integration of the time schedules of all the public transport solutions. The objective of this case study is to improve intermodal transport between rail and maritime solutions in the Tirana and Durres regions.
The Albanian Ministry of Infrastructure and Energy, Inter-Connect project's partner, intends to promote intermodal solutions using various information channels including the website of the Ministry of Transport, Albanian tourism fairs and sites of Albanian tourism. This integrated digital time information will allow foreigners and/or Albanians returning from their journeys to have the necessary information in real time so that they can plan and coordinate their movements more effectively and efficiently.

The area considered would be the area from Durres to Tirana, including the area of the Rinas international airport. The study will focus more on the area around Durres ferry terminal and Durres central train station. In fact, the ferry terminal at the port of Durres is very close (and within walking distance) from the central train station of Durres.

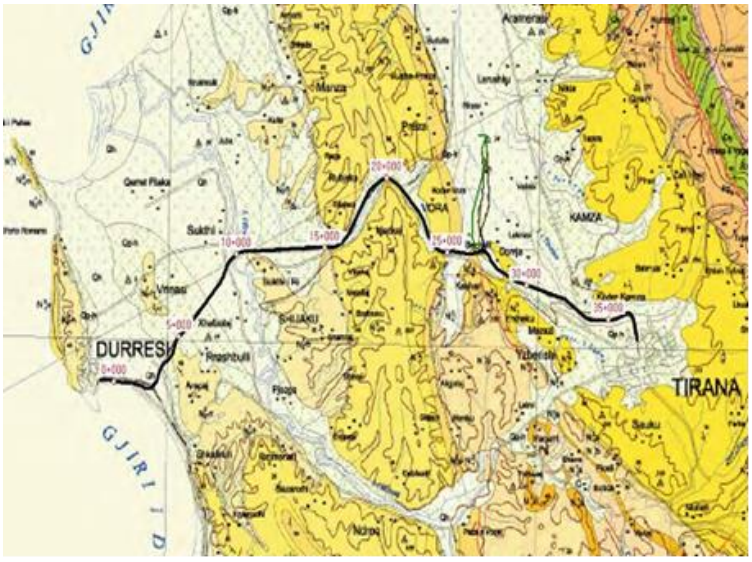


Figure 11: Map of area of Durres-Tirana-link to internal airport

2.1.8 The Belgrade case study, Serbia

Description of the current status

Serbia has a weak rail network due to several infrastructures delays. For this reason a major renewal of railway tracks is currently underway. The rail link between Belgrade and Ljubljana (Slovenia), and consequently also the one with Piran (Slovenia) and Trieste, can be considered of good quality, thanks to its recent realization. On the contrary, the duration of the trips to the other cities of the ADRION area compromise the choice despite the low costs. Serbia, being at the center of Eastern Europe, has no access to the sea, and consequently has no direct maritime connections with the rest of the area, consequently the air and road routes are the main transport solutions. The vast majority of all passenger movements are carried out by private car with a small part of rail transport. In the transnational context, Belgrade is located in pan-European corridor 10, on the right bank of the Danube (corridor 7). The following image closely explains the position of the city of Belgrade in relation to the corridors mentioned.
In terms of transnational road connectivity, through the 3 corridors mentioned and their branches, Belgrade is well connected with Zagreb-Croatia in the west, Budapest-Hungary in the north and Thessaloniki-Greece in the south. Furthermore, existing connections with improvement needs are the port of Bar-Montenegro to the south and connections to the east, to Sofia-Bulgaria and to the north-east with Romania.

Figure 12: Indicative extension of TET-T

When it comes to rail connections, most of the tracks need investments to be improved. The most important are the connections from Zagreb-Croatia and Budapest-Hungary to Belgrade and further from Belgrade to Thessaloniki-Greece and Bar-Montenegro. In terms of Belgrade's transnational connectivity, it is important to remember that Nikola “Nikola Tesla” airport is the busiest airport in the area with over 5 million passengers per year, but without rail connections to the Belgrade city centre.
However, the main case to be explored is the potential of transnational, regional and national passenger movements in terms of intermodal solutions and railway rehabilitation, as well as changes in passenger behaviours and habits in light of the latest construction projects in the city center and transfer of central and bus stations to new locations.

The examination plan

The examination of the influence of critical issues for Belgrade could be developed in three directions:

- Effects of the circulation of central bus and rail stations, potential advantages in terms of intermodality as well as possible problems (for example connections with the southern and eastern parts of the city, changes in the regime and intercity bus timetables, new necessary connections, rail connections etc. .);
- Possibility of railway connection to Belgrade airport "Nikola Tesla";
- Examination of new and activation of existing positions for the "Park and Ride" system in Belgrade.

The examination plan in general should consist of:

- Analysis of the current situation in terms of passengers demands, flows, interconnection opportunities;
- Coordination existing transport strategies and plans and others sectorial policies, plans and strategies;
- Analysis of three different levels: Local travellers (city of Belgrade level), national travellers (intercity and Belgrade river basin) and transnational travellers (Adrion area).

The case study attempts to develop guidelines and proposals for the further development of the Belgrade transport system thanks to three sub-cases of intervention mentioned above, highlighting the new opportunities for intermodal and railway development, aiming at the same time to highlight possible problems and prepare recommendations to avoid possible negative effects of development.
The case study refers to a feasibility study with a detailed research of the flows and the projections of the future relations between transport demand and supply. Moreover one objective is to collect existing materials and data, projects and plans in one place, analyze them and create recommendations or highlight any existing and future weaknesses, with the aim of facilitating work on the realization of assets and future infrastructures and organizational projects of the Belgrade transport system.
Another objective is to provide an overview of the effects of future development, with the aim of allowing the public and private sector to be ready for the changes, in particular rail and bus operators, as well as the city's public transport system. Finally, another objectives is to reduce carbon emissions to 90.2% compared to 1990 level. Better connectivity between the new railway station and the public transport system will have a positive impact on carbon emissions in Belgrade.

Table 1: The Inter-Connect case studies.

Case Study	Current status	Inter-Connect action plans
Igoumenitsa	- Road transport is still the most effective transport solution. - Igoumenitsa is not currently served by the railway. - The only regional PuT solution, with relatively low performance, are intercity buses. - Absence of integrated services (ticketing, information, harmonization of timetables).	- Promotion of more attractive public transport service for tourists (accompanied by an offer of integrated tour packages). - Create a hub to hub regular connection between the port and the inter-city public transport terminal. - New PT service having two bus lines: one regular and one based on the Demand Responsive Transport model to serve seasonal needs during summer peak period.
Emila-Romagna Region	- Need to improve rail passenger transport solutions between the regional capital, Bologna and Romagna cities. - Long train journeys duration between Bologna and coastal cities. It was the same since long time. - Weak accessibility of the coastal areas (Romagna - province of Ravenna, Forlì-Cesena and Rimini) from the Bologna hub.	- Increase rail passenger attractiveness reducing the travel time among Bologna, Ravenna and Rimini adopting soft solutions. - Develop a train-bus integrated ticket for tourists visiting the Romagna region using public transport.
Ljubljana	- The Slovenian maritime services are not adequately linked with inland public transport solutions. - The rail service is not competitive with road transports. - Integrated public transport solutions are not adequately developed. - Slow implementation of new transport policies.	- Improvement of the connections from maritime areas to Ljubljana Airport and Ljubljana urban region. - Improvement of info-mobility services (on-board and in the interchanges points) for tourists. - Improvement on fare integration and integrated ticketing systems. - Definition of organisational and regulation aspects aimed to improve public transport operation and the interconnectivity at regional level.
Trieste	- The Trieste Maritime hub is not adequately served by urban public transport. - Maritime services and their intermodal connections with Trieste's rail and public transport are not sufficient to promote the development of sustainable multimodal solutions.	- Improvement of public transport urban interchanges between buses/train hubs and the maritime passenger's terminal. - Understand the potential of a new maritime public transport connection from Trieste (Muggia) to Koper (Slovenia).
Zagreb	- Low use of train services by tourists. The main transport solutions adopted by tourists are private car, buses and ships in costal areas. - Costs to inland railway lines have long travel times, long waiting times in case of	- Improve information provision relate to timetables, punctuality and others problems during the trip (delays, unexpected events, etc.). - Facilitate and improve faster and cheaper train travels for

	interchange and high-ticket costs.	tourists from coastal to inland areas.
Port of Bar	- The railway connecting Bar to Belgrade does not meet modern railway transport requirements in terms of transport, speed, service level and reliability. - Poor connections between the port of Bar and the existing railway service. - Poor connections between the port of Bar and the hinterland. - Prevalent use of private cars for touristic purposes.	- Harmonization of the timetables. - Integrated ticketing service - providing real-time and reliable information. - Improve port to city connectivity. - Improve the role of port of Bar as gate at ADRION level.
Durres-Tirana	- the passenger cross boarder rail connections are possible only with the city of Belgrade. - Car is the main local transport solutions. - Aircraft is the main cross boarders transport solution. - Difficulties in providing reliable train information to passengers.	- Better train services information to final users thanks to the development of new technological solutions. - Improvement of the train connections among inland and costal areas (Tirana and Durres).
Belgrade	- The rail network is weak due to the low level of infrastructure. - Week connections with the others ADRION cities. - Road transport is the first travel solution both for tourists and local population.	- Definition of new solutions for urban promotion of intermodal bus and rail solutions. - Definition of innovative solutions to improve the movement of passengers between two main transport nodes (Central railway station and central intercity/ international bus station).

2.2 Definition of a common evaluation methodology

In order to collect the relevant information in a common way among all the different project's partners, it was defined a common evaluation methodology. The aim is to extract valuable information (effective measures, necessary cooperation schemes to support interventions implementation, transferability potentials, funding schemes for actions' realization) able to be used in other areas and to be generalized in ADRION area.

In order to compare the different case studies, the level of development of each pilot in the framework of the Inter-Connect project were compared referring to 5 different case study's development steps as summarized in the table below.

Table 2. Case study development phases' descriptions.

Case study phases	Case study phases	Brief description of each phase
Phase 1	***Concept definition***	*Define needs, specify scopes, study the problem(s), identification of the main project ideas, identification of the key stakeholders to be involved.*
Phase 2	***Pre-feasibility study***	*There is more than one business scenarios and we want to know which one is the best, both technically and financially, to solve the identified problems. The objective of this phase is to select the best idea among several ideas. Minor components of investment and implementation/management costs are identified in order to select the best solution to be realized.*
Phase 3	***Feasibility study***	*It is the project evaluation and approval phase. It means there is a technical study presenting enough information to determine whether or not the project should be advanced and implemented. This is a "go/no-go" decision. In this step one project was approved and there is the political decision and/or the private commitments on the project implementation, "Green light" on the project implementation.*
Phase 4	***Project implementation***	*Project implementation (or project execution) is the phase where visions and plans become reality. This is the conclusion, after evaluating, deciding, visioning, planning, applying for funds and finding all the financial resources for the project.*
Phase 5	***Operation & maintenance***	*The project is fully implemented and operative. Project operations and maintenance phases encompasses a broad spectrum of services, competencies, processes, and tools required to assure the measure will perform all the functions for which a solution/project was designed and implemented.*

The assessment methodology focuses on four key dimensions:

- **Stakeholders engagement sustainability.**
- **Institutional and political sustainability.**
- **Financial sustainability.**
- **Technical sustainability.**

In relation to stakeholder's engagement sustainability, the objective is to identify the most relevant case study stakeholders and their specific contributions and role in reaching the project's main objectives. In fact it is important to understand their potential roles and contributions in the case study definition and implementation, their interests and objectives, useful to define the local action plans, paving the way to the replication of the Inter-Connect case studies in the ADRION area.

Stakeholder involvement is generally considered a good practice, not only to have a good technical outcome of project activities but also to guarantee the durability of the project results and effectiveness of actions.
The result of this mapping activity intends to support the identification of possible conflicts and coalitions between stakeholders, and how these may affect the action plan definition process in terms of geographical coverage, policy integration and resource availability. The engagement level is assessed using the categories summarized and described in the table below.

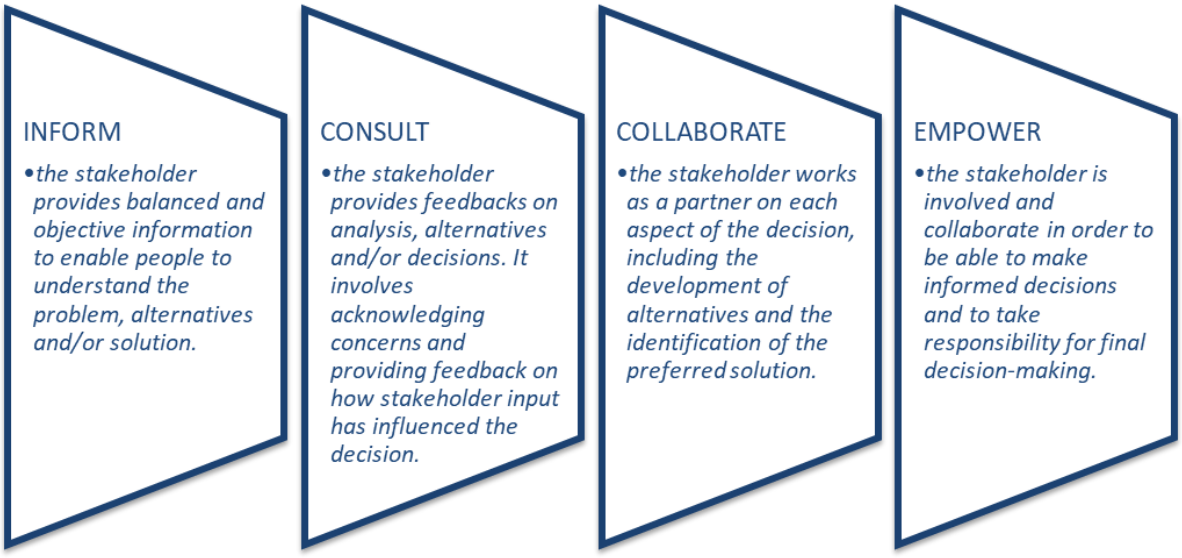


Figure 13. Engagement level scheme

After stakeholder's identification phase, the relationships between these is taken into account. This analysis is based on a list of different criteria or attributes which are relevant for the respective case, e.g. interest, power, influence on each other, coalitions, etc. This way it is possible to find out what the objectives of each stakeholder are, what their hidden agendas are, and whether they regard themselves as "winners" or "losers" if a given issue is implemented.
The objective of a systematic analysis of actor relationships is to get a clear picture of conflicts of interest or potential coalitions and to be able to better determine clusters of stakeholders who may exhibit different levels of interest, capacities and interest in the issue in question. For example, this can be done by developing an "Influence-Interest Matrix", which groups stakeholders by their level of influence/ importance as summarized in the table below.

Influence-Interest Matrix

	Low Influence	High Influence
Low stake	least Priority Stakeholder Group	useful for decision and opinion formulation, brokering
High stake	important stakeholder group perhaps in needs of empowerment	most critical stakeholder group

Source: UN-Habitat: Tools to Support Participatory Urban Decision Making, Nairobi, 2001, p. 24. available from: www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=1122

Figure 14. Influence-interest matrix. Source: UN-Habit

The paragraph related to institutional and political sustainability is a general part aimed to collect general information on the main policies and governance schemes supporting the development of the different case studies.
The financial sustainability paragraph intends to collect quantitative and qualitative information on financial sustainability of each Inter-Connect case studies. The aim of the financial sustainability analysis carried out is to evaluate if the Inter-Connect case studies are/will be supported by a strong and replicable business model.
The technical sustainability paragraph intends to analysis the key technical and technological aspects of the Inter-Connect case studies in order to understand the enabling technologies supporting the planning and/or the implementation and the management of the Inter-Connect case studies. A specific focus is dedicated to evaluate the practical solution supporting the intermodality promotion. A specific focus was dedicated to the latest ICT developments offering new opportunities to enable a leap forward in the way collective and individual mobility services are organised and offered. This paragraph intend to analyse the enabling technologies allowing the Inter-Connect case studies development and the way these technologies supports the case studies development. Finally the key technical KPIs are collected as summarized in the table below.

Table 3: Key technical KPIs

Indicator	Indicators
Transport modes integrated	Number and mode (train, bus, ship, ferry, airplane, bikes, etc.)
MaaS approach	YES/NO
Foreseen users	Number
Traffic reduction*	% or Co2 emissions
Pollution reduction*	% or Co2 emissions
Timetable integrations	YES/NO
App for final users	YES/NO

3 Analysis and assessment of the eight Inter-Connect case studies

3.1 Overview of the Inter-Connect case studies

In this paragraph, following the same assessment methodologies defined and described in the previous paragraph, each single case studies were assessed in deep. As the different case studies reached different level of development in the framework of the Inter-Connect project, the details of the technical information collected are different. But this is not a problem, as the different level of development allow to go more in deep in the different case studies' development phases, allowing to collect a wider set of qualitative and quantitative relevant information.

3.2 Case Study 1: The Igoumenitsa case study, Greece

3.2.1 Case study description

Igoumenitsa is the largest Municipality of the Prefecture of Thesprotia in terms of population with approximately 12.000 permanent residents in an area of 800.000 sq.m. The city has no public transport services, apart from a marginal and not very frequent inter-urban bus connection connecting the surrounding villages and suburbs with the city center, but not allowed to pick up passengers within the CBD area. A great opportunity for the transformation of the city arose through the recent conclusion of an integrated Sustainable Urban Mobility Plan (SUMP) for the target year 2037.
According to the recent SUMP study and results of an extensive household survey:

- 50% of the Households is having 1 and 2 members, the other 50% with 3 to 5 members;
- According to Sensus Data 2011, the Car Index is 3.482 car / thousand permanent residents;
- 85% of households have at least one car in their possession;
- Only 1% is using bicycle as their mode of transport;
- Ridership of private care exceeds 60% (driver or passenger);
- On foot mode is used by 26% for destinations above 100 meters;
- 67% of all individual trips are to and from work;
- A good 62% of car trips performed with just 1 person onboard.

The scope of this pilot activity is to promote the establishment of a new public transport service able to:

- Serve regular connection between terminals (e.g. the International Port of Igoumenitsa and the Inter City Bus Station;
- Allow international travelers to visit the city by Bus, having the chance to learn about its local offers and important archeological sites;
- To design, prepare and finally kick start a new synergetic Public Transport service with a regular line operating all year round and a DRT service for the summer period (7 months /year).

The case study of Igoumenitsa is to be elaborated at the level of concept definition and pre-feasibility study as briefly described hereinafter.

Table 4: Case study development phases' descriptions.

Case study phases	Case study phases	Brief description of each phase
Phase 1	**Concept definition**	Accommodate the PT needs of permanent residents, serve travellers' needs in sightseeing around the city and create a hub to hub regular connection between the port and the inter-city terminal of the city. Key stakeholders involved: The Municipal Authority, the Port Authority of Igoumenitsa, the intercity bus operator, the Region of Epirus and the Regional Unit of Thesprotia.
Phase 2	**Pre-feasibility study**	Two business and operational scenarios have been discussed and analysed to form the basis for the new service. The result is the formulation of a new PT service having two bus lines (one regular and one based on the Demand Responsive Transport model to serve seasonal needs during summer peak period
Phase 3	**Feasibility study**	N/A
Phase 4	**Project implementation**	N/A
Phase 5	**Operation & maintenance**	N/A

Phase 1. Concept definition

The city of Igoumenitsa being a small coastal city, should have not posed any threats to the wellbeing of its citizens and visitors. It was the mapping of its mobility patterns that have been recently discussed and analysed within the SUMP study that fertilised the public consultation about the future of the city. Obviously having a high private car ridership for such short commuter trips in terms of time and distance seems to be one the drivers to take immediate actions. Unfortunately, this perception of the car as the preferred mode seems to be deep-seated in the Greek society and is almost fixed and determined in the young generations, as well. As soon as these have the possibility to use and get access to a car, also young people do so. For example, cycling does not seem to be an option for students to access their schools as it is the case in many other European countries with far less favourable climatic conditions for cycling.

This pilot case is seeking to establish the widely acknowledged sustainability concept of using active modes of transport (walking and cycling) by and large, and Public Transport services for longer distance trips. This has been furthered through the city's vision for making Igoumenitsa a final destination as opposed to a mere port city serving Greek islands and international freight and passenger flows to Italy. This new public transport service will cover both needs at once. Last but not least the new bus lines will enable the direct and seamless interconnection between two important terminals of the city, the Ro-Ro Port and the inter-urban bus station.

As it is always the case in deploying anything new, a number of regional and national legal and institutional constraints appear. A city not having an urban service, is allowed to perform independently and provide a municipal service? Or this has to be performed by the inter-urban PT operation with a simple expansion of their service territory? The stakeholder in the city, are keen to work out these matters and make the necessary changes.

The whole project idea was based on the results, findings and outcomes of:

- The SUMP strategic study for year 2037 and its relevant proposals for developing a new PT service for the city;
- The SUMP findings for interconnecting the port with the intercity terminal ;
- The local questionnaire survey performed within Inter-Connect project during July and August 2019;
- The round table meeting held on Jan 9,2020 with the stakeholders.

Phase 2. Pre-feasibility study

The proposed new PT service includes two bus lines, the blue one being a regular line accommodating everyday needs of the residents all year round with an average frequency of 40min and ten (10) bus stops. The brown line is a DRT line mainly targeted to the cruise ship and international SSS passengers, but at the same time improving the bus frequency along the main route for 7 months a year (between April 1 and Oct. 31). The new service data can be found in a table here below.

INTERCONNECT – PT PILOT CASE			
		BLUE LINE	BROWN LINE
General information	Short Description	Based on the bus line design of the SUMP study - Allows regular connections with the Ladochori, Graikochori, N. Selefkia	2nd bus line targeted to cover seasonal demand for cruise ships and SSS international lines as well as permanent residents (also including sight seeing around the city)
	Service Type	Regular Bus Line (Blue line of SUMP study)	DRT service
	Hours/days in operation	12 months/year	7 months/year (April 1 – Oct 31)
	Total route length	14km	19km
Bus fleet	Bus type	Low floor / 50—65 passengers	Depending on investment size (2 vehicles already available from Intercity Bus Operator)
	Number of vehicles	2 vehicles	2-4 (Subject to availability / demand size)
	Bus stops	SUMP – up to 10	10+
QoS	Interconnections between hubs	With Bus Intercity terminal	Port / Bus Intercity terminal
	Hours in operation	07.00 - 22.00	07.00 - 22.00
	Frequency	40'	20 to 40'
Administrative issues	Implementor	Municipality (Municipal PT service)	Intercity bus / Port Authority
	Involved Stakeholders	Region of Epirus/ R.U. of Thesprotia	Region of Epirus/ R.U. of Thesprotia
CBA Analysis	Investment cost (vehicles/drivers/gas/maintenance/operation/insurance)	High	Medium / Low
	Infrastructure investment cost (bs stop shelters, sigining, advertising)	Medium	N/A
	Fair price	1.2 Euro	Variable
	Passengers / day of operation)	1400	Variable
	Funding sources	Own funding	PPP
ITS	Telematics infrastructure on-board/sw licence for DRT service / help desk / IVR	Enhancement	Obligatory in order to support DRT operations – including LBS for sight seeing along the route

Figure 15: PT pilot case

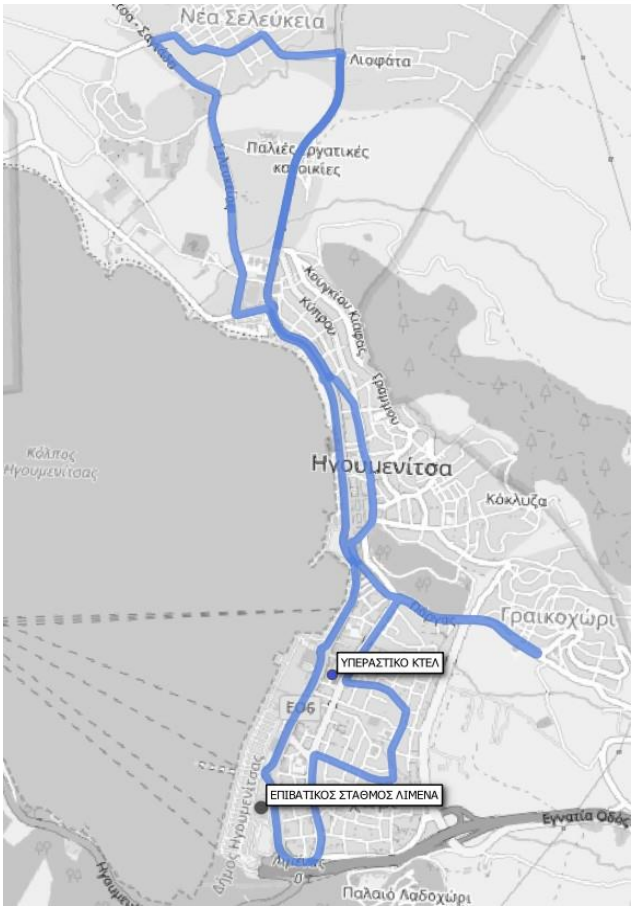


Figure 16: The Blue Line route (Regular line serving residential demand all year round)

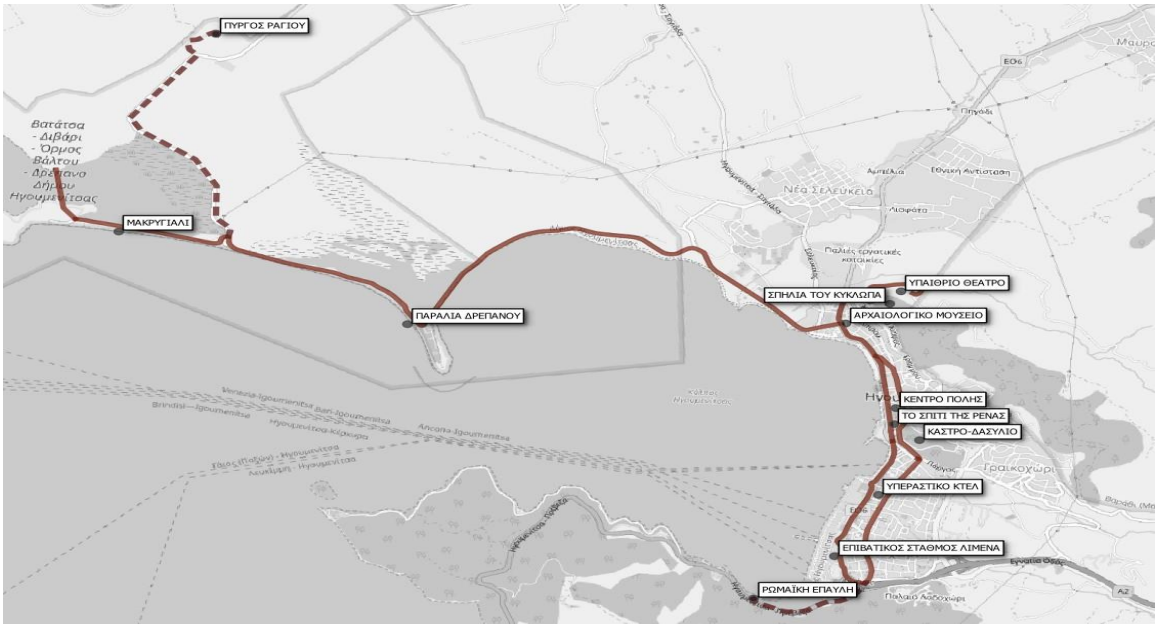


Figure 17: The Brown Line route (DRT line operating 7 months / year)

Table 5: PT deployment time plan

PT deployment time plan							
	2020	2021	2022	2023	2024	2025	2026- 2036
Phase 1 (Concept)							
Phase 2 (Pre-feasibility)							
Phase 3 Preparatory activities (negotiations, funding scheme, tender call, evaluation)							
Phase 4 launch of new service							
Phase 5: Operation and maintenance							

3.2.2 Stakeholders engagement

The pilot of Igoumenitsa was thoroughly presented and discussed in two important round table meetings. The main stakeholders were the following:

- Municipality of Igoumenitsa (represented by the mayor and the vice mayor as well as their chief engineering staff (architects, civil and transport engineers) ;
- The Regional Unit of Thesprotia (represented by their engineering staff);
- The traffic police (represented by the chief);
- The Chamber of Trade and Commerce (representing professionals and also retail businesses in the area);
- The port authority (represented by their CEO);
- The interurban bus operator (represented by their president and CEO as well as their technical staff).

It is worth mentioning that the fruitful discussion that took place during the round tables raised no issues for possible conflicts of interest between the stakeholders. It came out that all stakeholders - without exceptions – are keen to deploy and expand the SUMP action plan and to this end Inter-Connect public transport service fits their expectations in full.

Main public and private stakeholders involved

Table 6: stakeholders involved in the case study

Type of stakeholder	Stakeholders and brief description	Role in the case study
Public authority / decision makers	• City of Igoumenitsa • Port Authority of Igoumenitsa • Region of Epirus • Regional Unit of Thesprotia • Traffic Police	• Bus operator for the regular bus line (Blue line) • Terminal operator willing to provide connections with the intercity terminal • Licencing process • Bus stops • Traffic measures
Private operators	• Intercity private bus operator	• Currently holding two low floor buses that can be used for the new service
Citizen/Customs	• None as yet	• None as yet
Others	• The chamber of commerce of Igoumenitsa	• Supporting the implementation

The Municipal authority both at political as well as at technical level is determined to take actions towards sustainability. The SUMP action plan is practically furthered by Inter-Connect local pilot, therefore it will be fully supported and lead by them.
The Port Authority loudly expressed their full support on the new idea, seeking specific ways to support either financially and or technically by providing infrastructures for bus stops and low floor buses. The CEO of the port acknowledged that their services within the port premises alone cannot establish the necessary level of quality their clients expect. The port underlined the need to actively support and bilaterally co-ordinate with other stakeholders the new services.
The Regional Authorities will help a great deal to overcome administrative burdens with emphasis on how the municipal authority can lead the new project and to what extent.
Traffic police has the duty to prevent and enforce traffic rules, but obviously their vital role will be greatly enhanced and eased if a percentage of the daily person trips are shifted away from private car.
The intercity private bus operator although initially expressed their reservations on how people will be convinced to use Public Transport services, finally believe it is worth the try, and if succeed will change everyone's life for the better.
The Chamber of commerce is acknowledged as a consultant for the project, expressing their belief that SUMP action plan has to be implemented in conjunction with the pilot activity, something that everyone supports at the time.

Engagement levels

The level of stakeholders' commitment increases with the responsibility it is given to them. Higher commitments mean better results but also higher expectations from the stakeholder.

Table 7: Levels of engagement of stakeholders

Stakeholder	Level of commitment	Brief description of the commitment level
Stakeholder 1 - Municipal Authority of Igoumenitsa	Empower	High – Initiator of the new project
Stakeholder 2 – Port Authority of Igoumenitsa	Collaborate	High – willing to collaborate with the city to enhance passengers' mobility needs
Stakeholder 3 – Intercity private Bus operator	Collaborate	High – willing to offer two low floor buses for the pilot case as a starting point
Stakeholder 4 – Chamber of Commerce	Consult	High – fully acknowledging the need for PT services
Stakeholder 5 – Region of Epirus	Collaborate	Positive
Stakeholder 6 – Regional Unit of Thesprotia	Empower	Positive
Stakeholder 7 – Traffic Police	Collaborator	Positive

Stakeholders influence-interests matrix

Table 8: Influence-interest matrix. Source: UN-Habit

	Low Influence	High influence
Low stake	Chamber of Commerce	Region of Epirus Traffic Police
High stake	Intercity Bus Operator Port Authority	Municipal Authority Regional Unit of Thesprotia

Engagement Strategies

The development of the SUMP - part of which the pilot should be regarded - is not a just another traditional planning project, carried out by a single administration, planning institutions and some experts in setting up a plan. It is rather a process, involving administrations, planning institutions but also all other relevant stakeholders, influencing or being affected by the development of the transport system and demand for mobility, operators, services providers, special interest groups and the citizens themselves. The strength of a SUMP is not the plan in itself but is a plan that has been developed in a process involving all stakeholders, is a plan being understood and accepted by all or the majority of stakeholders, is a plan being accepted as their own plan, ownership of the plan being with the stakeholders and not some planning experts.
This engagement process can be graphically displayed in a pyramid to the base of which we have to consider the citizens and visitors of the city. Right above opinion formers lie, namely the local media. The next level regards stakeholders who are influenced by the action and above them go those who influence others. At the very high level of this pyramid are placed the decision makers followed by their planners and engineering departments.

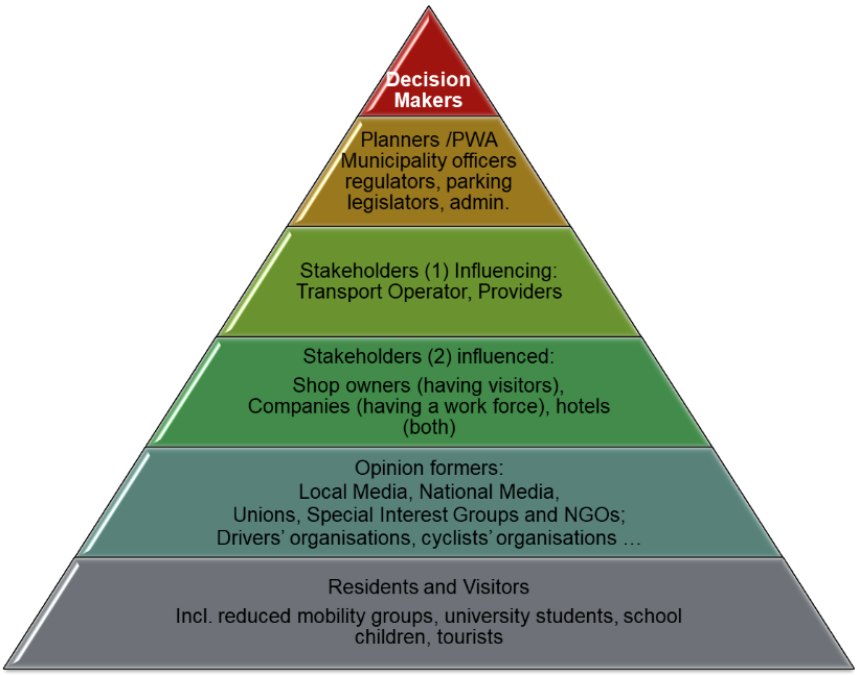


Figure 18: Engagement process pyramid

Table 9: Engagement strategies

Engagement strategies	Do you use this strategy in your case study? (Yes/No)	Brief description of the engagement strategy used
Invitation Letters	Y	Have been sent in the frame of the round table discussion meetings
Questionnaires and Surveys	Y	A questionnaire survey was held to define permanent residents' views for a DRT bus service
Exhibitions and Road Shows		
Public Meetings	Y	More meetings will take place as the project produces sound results
Use of the full range of the media		

Structured interviews		
Forums		
Focus Groups	Y	Special working groups between stakeholders are to be established
Advisory Committee		
Workshop		
Round Table Discussions	Y	Two round table discussions were held to prepare and explain the pilot case
Public-private agreement	Y	To be further discussed and presented in the MoU
Participatory processes		
Memorandum of Understanding (MoU)	Y	To be discussed and undersigned within March 2020
Others (please add)		

In practical terms the most powerful tool for implementing a change is face to face meetings at various levels of representation. Matching the level of representation between stakeholders is vital in order to achieve maximum outputs. Igoumenitsa pilot has to work in parallel at three levels, namely the policy level (political commitment to sustainability principles), the technical level (tackling technical issues, deciding on routes, schedules, fleet characteristics, bus stations etc.) and last but not least at institutional/legal level. It is well known that a lot of projects cannot be implemented in due time, as a result of deficiencies in institutional preparedness and legal constraints preventing the involved parties from executing their duties.
Questionnaire and field surveys have been performed during the last couple of years in Igoumenitsa in the frame of the SUMP study recently expanded by those performed for Inter-Connect. A lot of useful information has been made available and undoubtedly helps a lot in all kinds of discussion, focus groups for making clear statements for the present and make forecasts for the future. A number of these surveys were directly focused to the citizens, thus raising their level of awareness.

3.2.3 Institutional and Political Sustainability

Main national and regional policies supporting the case studies

One the most profound prerequisites of success of a transport strategy is how well this fit into national, regional and local policies. To this end any future development of the city of this size, should take into account current regional policies.
In the frame of the Strategic Plan for the Region of Epirus, in which Thespotia is one of its regional units, in May 2015 a new operational plan was agreed for 2014-2020. This important strategic document included a state of the art and evaluation study for the whole region of Epirus, both at territorial level as well as as tool (road map) for achieving the vision for development for the future:
«Worth living in, self-sustained, open to changes and focused in productive actions as part of their competitive advantage, empowering the local identity, protecting the environment, its historical background and the citizen of Epirus».

The Region's operational objectives defined in this document inter-alia include the following:
- Creation of small industrial units focused on export and based on innovation;
- Production of agricultural products of high quality;

- Development of alternative forms of tourism with emphasis on sports also related to the physical resources of the greater area;
- Protection of natural environment, taking actions for sustainable management of its resources
- Improvement of infrastructure in road networks;
- Citizen centered administration services – improving the quality of the end products and services.

The last two items can be regarded as operational objectives that are fully supporting the PT pilot case and new service. Worth mentioning that these regional policies are substantially enhanced by cross-border, regional and transnational INTERREG programmes already a number of decades.
At local level the most important strategic document should be considered the recently completed SUMP for Igoumenitsa. The project and the Inter-Connect pilot case binded together are encompassed in the preferred scenario for transport mobility up to year 2037. The regular bus line was already included in the final SUMP scenario and is fully adopted by this proposal, now further enhanced with a new DRT service for seven (7) months a year (April 1 to October 31). In both cases the routes offer a regular connection between intermodal terminals.
An initial SWOT analysis on the pilot case was also performed as a decision-making tool for the stakeholders.

S	**W**
• The main (Western) maritime entrance/exit for Greece (connected to Italy) • The natural beauty of the area • A completed SUMP that shows the path towards sustainable connectivity of the city	• Lack of PuT services • Insufficient walking and cycling paths • High use of private car • Although Igoumenitsa is located to a geographically strategic point, it has not yet been developed as a touristic center or as a "destination" point for visitors. Both the lack of appropriate infrastructure that could promote the city as an attraction pole and the lack of alternative option to private cars, resulted to this main weakness of the city.
O	**T**
• Tourism increase • Entrepreneurship increase • Accessibility • Equity • Clean and safe environment • Free spaces • Employment increase in the primary sector • Daily trips facilitation • Reduction of private cars' usage • Sports facilities increase • Domestic pollution reduction • Reduction of pollutants generated by port's operations • Innovative mobility schemes • Traffic restriction for older vehicles • New technologies for traffic	• To lose strategic role from neighbor gates (Albania or national; e.g. Ioannina Airport, Aktion Airport, Corfu Airport) • The expansion of the port through the forthcoming concession may produce an even bigger gap in accommodating large passenger flows in the city

management • Reduction of trips number by provision of e-services	

Governance scheme adopted

The creation of public transport options for the city lies at the very heart of SUMP strategy for 2037. The action plan for the future has included this development in the first five (5) years of its deployment, therefore the pilot is fully relevant and ready to be worked in detail. The pre-feasibility stage of the work is more or less the preparatory phase of implementation and as such needs no extra decision at regional or local level.

3.2.4 Financial Sustainability

General information on the case study's financial scheme

Regular Bus service in urban conglomerate. The pilot case's feasibility strongly depends on whether the various involved stakeholders will collaborate in order to offer the new service in due time.

Case study's general costs

In the framework of the financial and socio-economic analysis for the pilot, it was deemed adequate to present:

- a single scenario for the blue line with two (2) new low-floor buses and all year-round operation.
- DRT service having 2, 3 or 4 buses for 8 months/year.

In the DRT case the implementation body is the intercity bus operator which has already 2 low-floor vehicles in their possession, therefore they have to acquire another 1 or 2 buses according to the corresponding scenarios.
The following tables indicate the costs of investment and operation (€) for the 4 scenarios under scrutiny.

Table 10: Single scenario: Blue line

Cost categories	2026	2027-2036 (total)
Investment costs (2 buses)	500,000	
Investment costs (infrastructure)	50,000	
Telematics Fleet management & information equipment	100,000	
Advertising costs, passenger information		500,000
Operating costs (fuels)		1,415,716
Operating costs (operation time)		7,880
Operating costs (employees)		864,000
Maintenance costs		650,000
Bus fleet depreciation		374.353
Total (€)	**650,000**	**3,811,949**

Table 11: DRT service: 2 buses (existing)

Cost categories	2026	2027-2036 (total)
Investment costs (value of existing 2 buses)	100,000	
Investment costs (infrastructure)	50,000	
Telematics Equipment	200,000	
Advertising costs, passenger information		100,000
Operating costs (fuels)		1,120,775
Operating costs (operation time)		4,596
Operating costs (employees)		504,000
Maintenance costs		250,000
Bus fleet depreciation		74,871
Total (€)	**350,000**	**2,054,242**

Table 12: DRT service: 3 buses (2 existing buses and 1 new bus)

Cost categories	2026	2027-2036 (total)
Investment costs (value of existing 2 buses and buying 1 new bus)	350,000	
Investment costs (infrastructure)	52,500	
Telematics Equipment	280,000	
Advertising costs, passenger information		350,000
Operating costs (fuels)		3,362,325
Operating costs (operation time)		6,895
Operating costs (employees)		756,000
Maintenance costs		507,500
Bus fleet depreciation		262,047
Total (€)	**682,500**	**5,244,767**

Table 13: DRT service: 4 buses (2 existing buses and 2 new buses)

Cost categories	2026	2027-2036 (total)
Investment costs (value of existing 2 buses and buying 2 new buses)	600,000	
Investment costs (infrastructure)	120,000	
Telematics Equipment	360,000	
Advertising costs, passenger information		600,000
Operating costs (fuels)		8,966,200
Operating costs (operation time)		9,193
Operating costs (employees)		1,008,000
Maintenance costs		960,000
Bus fleet depreciation		449,224
Total (€)	**1,080,000**	**11,992,617**

The expected financial revenues from the operation of the lines for the above 4 scenarios are presented below (ticket fares and residual value of vehicles).

Table 14: The expected financial revenues from the operation of the lines for the above 4 scenarios

	Blue line (2 new buses)	Brown line (2 existing buses)	Brown line (2 existing and 1 new bus)	Brown line (2 existing and 2 new buses)
Total revenues from tickets (€)	6,128,640	3,319,680	7,916,160	15,832,320
Residual value (€) / (year 2030)	125,000	25,000	87,500	150,000

On the basis of the above data, the results of the following Table were obtained. Below diagrams can be found derived from the sensitivity analysis carried out for the IRR index in each of the 4 scenarios, for a fluctuation in passenger traffic of +/-10% and +/-20%.

Table 15: The result obtained

	urban bus line (blue)/2 new buses	DRT bus line (brown)/ 2 buses (existing)	DRT bus line (brown)/ 3 buses (2 existing and 1 new bus)	DRT bus line (brown)/ 4 buses (2 existing and 2 new buses)
IRR 5-year operation	19.88%	22.49%	25.48%	20.61%
IRR 10-year operation	32.27%	33.70%	36.44%	32.56%
Routes/day	45	45	90	180
Average daily passenger traffic (passengers/day)	1,400	1,300	3,100	6,200
Average number of passengers/routes	31	29	34	34
Dead point of activity grade (passengers/day)	870	750	1,875	4,460

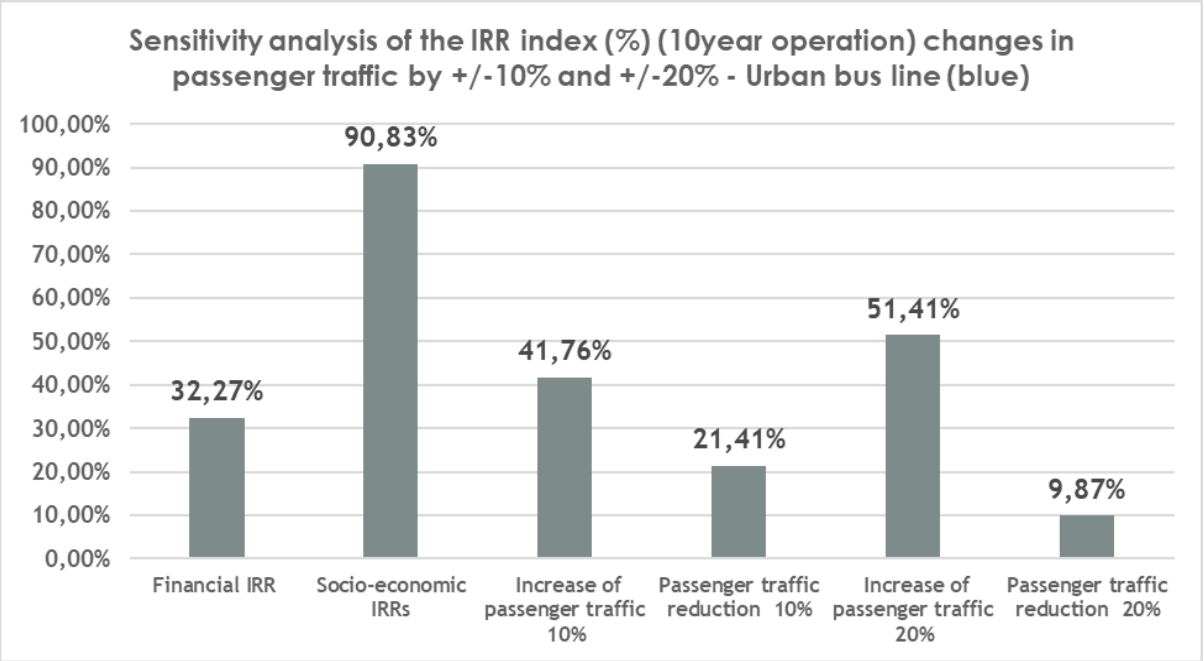


Figure 19: Sensitivity analysis of the IRR index

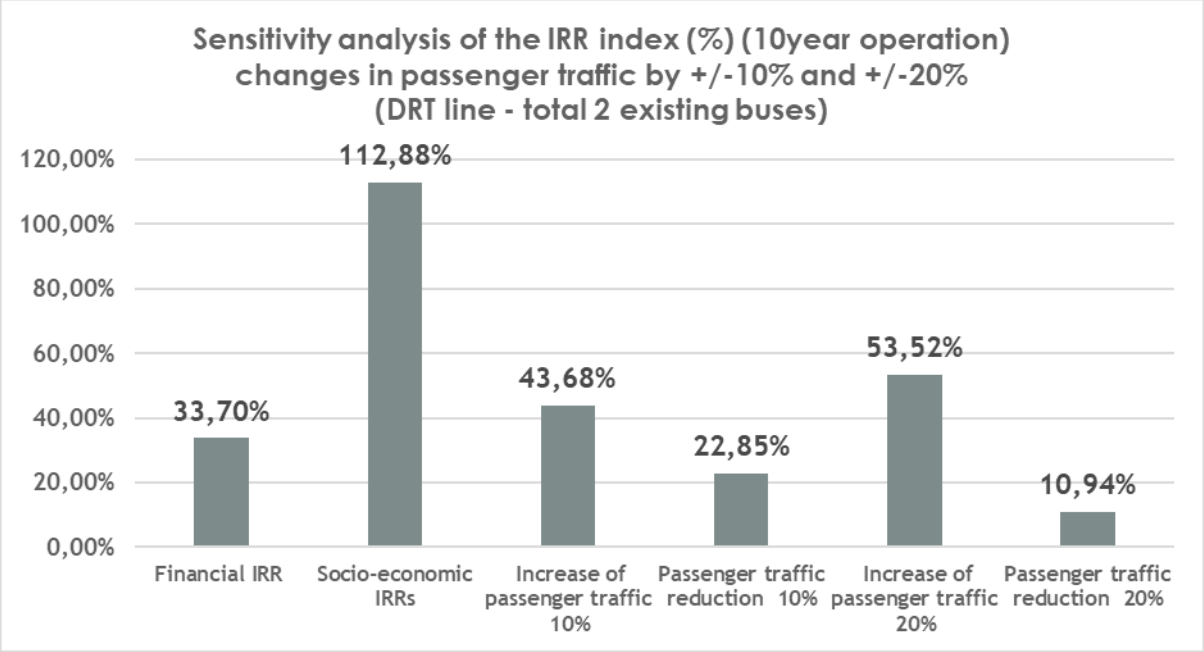


Figure 20: Sensitivity analysis of the IRR index

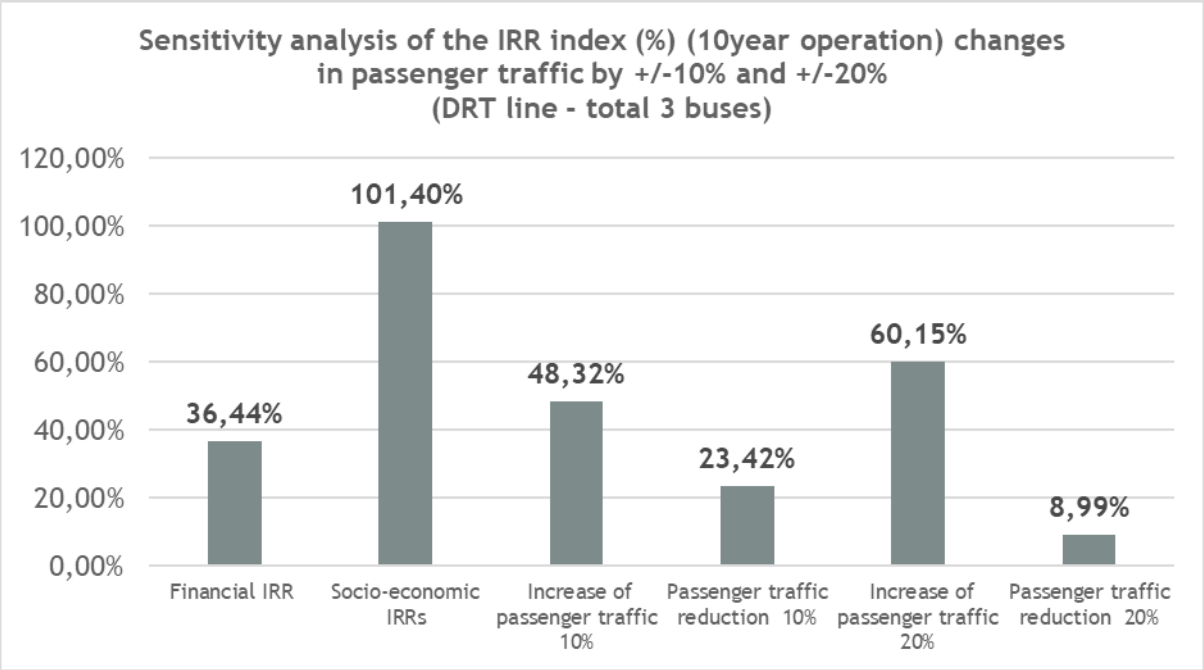


Figure 21: Sensitivity analysis of the IRR index

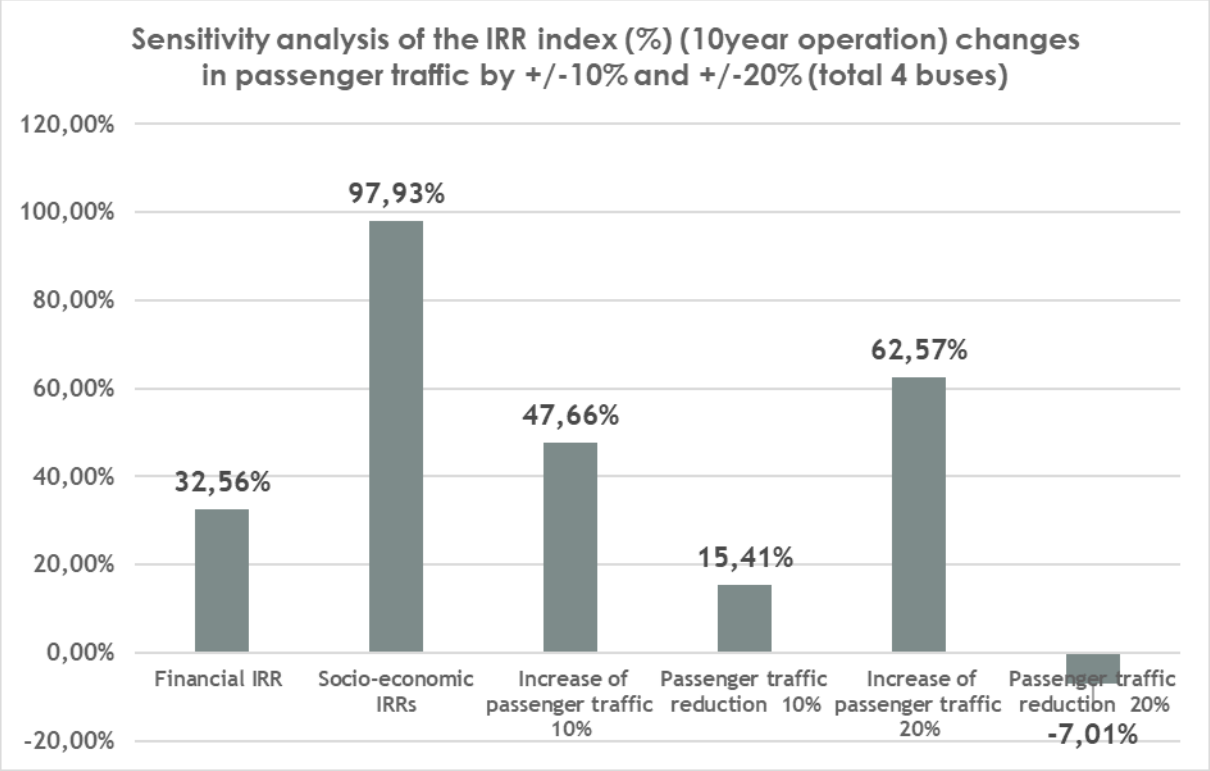


Figure 22: Sensitivity analysis of the IRR index

The following Tables show individual elements taken into account in the calculations as well as the results of the socio-economic evaluation of the project (in combination with its purely economic evaluation).

Table 16: Analysis table of urban bus line (blue line)

Analysis Table of Urban Bus Line (blue Line)	
Ticket price	€1.20
Session (months)	12
Operational days	365
Total path length	14.00
Number of buses	2
Working hours of the offered service (hrs)	15
Frequency (minutes)	40
Frequency (hrs)	0.67
Bus purchase cost	€250,000
Telematics Equipment	€100,000
Average functional movement speed (Km/h)	30
Schedules/day	45
Average fuel price (€/lt)	1.40
Average fuel consumption (€/km)	0.22
Employees (drivers)	4
Monthly salary	€1,800.00
Average daily passenger traffic (passengers/day)	1,400
Average number of passengers/route	31
IRR 5-year operation	19.88%
IRR 10-year operation	32.27%
Socio-economic IRRs (10-year operation)	90.83%
Fixed daily costs	€803
Product Unit Variable Output	0.28
Dead point of activity grade (passengers/day)	870
Expected financial result (€/day)	489
Standard deviation of profit (€/day)	44.53
Range to move the daily profit with a probability of 95.5%	€400-578
Range will the daily profit be initiated with a probability of about 50%	€458-520

Table 17: Analysis table of urban bus line (case1)

Analysis Table of Urban Bus Line (DRT Line – Brown line) Case 1: Use of 2 existing buses	
Ticket price	€1.20
Session (months)	7
Operational days	213
Total path length (Km)	19.00

Number of buses	2
Working hours of the offered service (hrs)	15
Frequency (minutes)	40
Frequency (hrs)	0.67
Bus purchase cost (1 new vehicle)	0
Current bus value (2 vehicles)	€100,000
Telematics Equipment	€200,000
Average functional movement speed (Km/h)	30
Routes/day	45
Average fuel price (€/lt)	1.40
Average fuel consumption (€/km)	0.22
Employees (drivers)	4
Monthly salary	€1,800
Average daily passenger traffic (passengers/day)	1,300
Average number of passengers/route	29
IRR 5-year operation	22.49%
IRR 10-year operation	33.70%
Socio-economic IRRs (10-year operation)	112.88%
Risk Analysis	
Fixed daily costs	€763.52
Product Unit Variable Output	0.18
Dead point of activity grade (passengers/day)	750
Expected financial result (€/day)	559.64
Standard deviation of profit (€/day)	42.32
Range to move the daily profit with a probability of 95.5%	€475 - 644
Range will the profit be initiated with a probability of about 50%	€530 - 589

Table 18:Analysis table of urban bus line (case2)

Analysis Table of Urban Bus Line (DRT Line – Brown line) Case 2: Use of 2 existing buses and 1 new bus	
Ticket price	€1.20
Session (months)	7
Operational days	213
Total path length (Km)	19.00
Number of buses	3
Working hours of the offered service (hrs)	15
Frequency (minutes)	30
Frequency (hrs)	0.50

Bus purchase cost (1 new vehicle)	€250,000
Current bus value (2 vehicles)	€100,000
Telematics Equipment	€280,000
Average functional movement speed (Km/h)	30
Routes/day	90
Average fuel price (€/lt)	1.40
Average fuel consumption (€/km)	0.22
Employees (drivers)	6
Monthly salary	€1,800
Average daily passenger traffic (passengers/day)	3,100
Average number of passengers/route	34
IRR 5-year operation	25.48%
IRR 10-year operation	36.44%
Socio-economic IRRs (10-year operation)	101.40%
Risk Analysis	
Fixed daily costs	€1,935.30
Product Unit Variable Output	0.17
Dead point of activity grade (passengers/day)	1,875
Expected financial result (€/day)	1,264.96
Standard deviation of profit (€/day)	77.45
Range to move the daily profit with a probability of 95.5%	€1,110-1,420
Range will the profit be initiated with a probability of about 50%	€1,211-1,319

Table 19: Analysis table of urban bus line (case2)

Analysis Table of Urban Bus Line (DRT Line – Brown line) Case 3: Use of 2 existing buses and 2 new buses	
Ticket price	€1.20
Session (months)	7
Operational days	213
Total path length (Km)	19.00
Number of buses	4
Working hours of the offered service (hrs)	15
Frequency (minutes)	20
Frequency (hrs)	0.33
Bus purchase cost (2 new vehicle)	€500,000
Current bus value (2 vehicles)	€100,000
Telematics Equipment	€360,000
Average functional movement speed (Km/h)	30

Routes/day	180
Average fuel price (€/lt)	1.40
Average fuel consumption (€/km)	0.22
Employees (drivers)	8
Monthly salary	€1,800
Average daily passenger traffic (passengers/day)	6,200
Average number of passengers/route	34
IRR 5-year operation	20.61%
IRR 10-year operation	32.56%
Socio-economic IRRs (10-year operation)	97.93%
Risk Analysis	
Fixed daily costs (€)	€4,867.12
Product Unit Variable Output	0.15
Dead point of activity grade (passengers/day)	4,460
Expected financial result (€/day)	1,828.06
Standard deviation of profit (€/day)	98.77
Range to move the daily profit with a probability of 95.5%	€1,630-2,026
Range will the profit be initiated with a probability of about 50%	€1,759-1,897

Expected economic resources and their duration

An important issue in the development and implementation of SUMPs related actions such the one proposed for the city of Igoumenitsa is to secure the necessary financial resources. In most cities, investment financing needs for sustainable mobility outweigh the available resources. The potential difficulty in finding resources is mainly related to "heavy" projects such as building new or expanding existing transport infrastructure. The PT project of the city and its relevant interventions can be considered as "light" ones. The SUMP implementation plan for the city will have in a way to compete with other investment needs considered for the same time frame. In this respect a reference to how funding can be secured is deemed necessary for all involved key actors.

Funding and financing are two terms with different meaning, but they are often used for the same purpose. Since both funding and financing can be used for the implementation of a SUMP, it is useful to provide the meaning of each term.

Funding is an amount of capital provided by an organization or government on the basis of an agreement. It is usually free of charge. There may be certain contractual requirements in that agreement, but there are no requirements to pay back the capital. The most common facilitators that normally fulfil the funding needs of an organization are the Central, Regional and the Local governments as well as International Organisations such as the EU which provide grants under certain terms; other private entities may also fund projects through donations.

Financing, on the other hand, is an amount of capital or the sum of money provided to an organization with the expectation to repay, and organizations are liable to pay back the capital amount along with a certain percentage of interest. Therefore, the repayment also includes an interest component. It is usually provided by financial institutions like banks, or investors like venture capitalists, business angels, shareholders, etc.

In implementing a project, funding and financing may be combined. The former part will be provided as a grant and the latter in the simplest form as a loan.

Regarding urban areas, in most cases, society (taxpayers) and beneficiaries bear the financial burden of the implementation of a SUMP related action. SUMP beneficiaries can be classified into two main categories, direct beneficiaries (users) and indirect beneficiaries (businesses, real estate owners, developers).

SUMP related interventions - funding and financing possibilities

The main funding sources for realising this very action as well as other SUMP-relevant actions are:

- The EU Funds (Structural, Investment, Cohesion, Social Fund);
- Government and taxpayers;
- Investors, banks and capital markets;
- Real estate owners and developers through Land Value Capture;
- Employers through levies, e.g. parking levy;
- Travellers through tolling, parking charging, etc.

The different financial instruments for such investments may be distinguished to:

- Instruments for funding purposes relating to capital received for investments without requirement to be paid back;
- Instruments for financing purposes pertaining to capital received for investments coupled with the condition to be paid back with interest (see also next sub-section);
- Usually, cities realising SUMPs would seek financing only when funding opportunities are exhausted.

Table 20: Economic resources

Kind of funds	Availability and date of availability (YYYY)	State of the financing	Duration	Brief description
European funds	To be defined			
National funds	N/A			
Regional funds	2025 onwards	For acquiring new low floor buses	2 years – 2025-2027	
Private funds	Y			In case of concession of PT services
Subsidies/Incentives	Y	For renewal of fleet and infrastructure equipment		
Internal/own economic resources	2023-2024			
Others	N/A			

Foreseen revenues streams/internal economic resources

The expected financial revenues from the operation of the lines for the above 4 scenarios are presented at the Tables below (tickets**,** residual value of vehicles and social benefits).

Table 21: The expected financial revenues from the operation of the lines for the above 4 scenarios

Period 2021-2030	Blue line (2 new buses)	Brown line (2 existing buses)	Brown line (2 existing and 1 new bus)	Brown line (2 existing and 2 new buses)
Total revenues from tickets	€6,128,640	€3,319,680	€7,916,160	€15,832,320
Residual value / (year 2030)	€125,000	€25,000	€87,500	€150,000
Percentage (%) of investments and operational costs to be covered by the projected revenue	about 140%	about 139%	about 135%	about 122%

Table 22: Analysis table of urban bus line (blue line)

Analysis Table of Urban Bus Line (blue Line)	
Annual benefits of direct jobs from the operation of the project	€86,400
Annual benefits of indirect jobs from the operation of the project	€43,200
Annual benefits from reheating of local economy	€66,189
Annual benefits of reducing traffic accidents	€100,000-150,000
Annual benefits of saving	€77,242
Annual benefits of direct jobs from the operation of the project	€50,400
Annual benefits of indirect jobs from the operation of the project	€25,200
Annual benefits from reheating of local economy	€20,914
Annual benefits of reducing traffic accidents	€100,000-150,000
Annual benefits of saving	€71,725
Annual benefits of direct jobs from the operation of the project	€75,600
Annual benefits of indirect jobs from the operation of the project	€37,800
Annual benefits from reheating of local economy	€49,872
Annual benefits of reducing traffic accidents	€100,000-150,000
Annual benefits of saving	€171,036

Table 23: Analysis table of urban bus line (DRT line-Brown line)

Analysis Table of Urban Bus Line (DRT Line – Brown line) Case 3: Use of 2 existing buses and 2 new buses	
Annual benefits of direct jobs from the operation of the project	€100,800
Annual benefits of indirect jobs from the operation of the project	€50,400
Annual benefits from reheating of local economy	€99,744
Annual benefits of reducing traffic accidents	€100,000-150,000
Annual benefits of saving	€342,073

Case study's financial soundness

The analysis that presented earlier shows that for each of the 4 scenarios analysed, the number of routes shown in the chart below will take place in the city of Igoumenitsa every day.

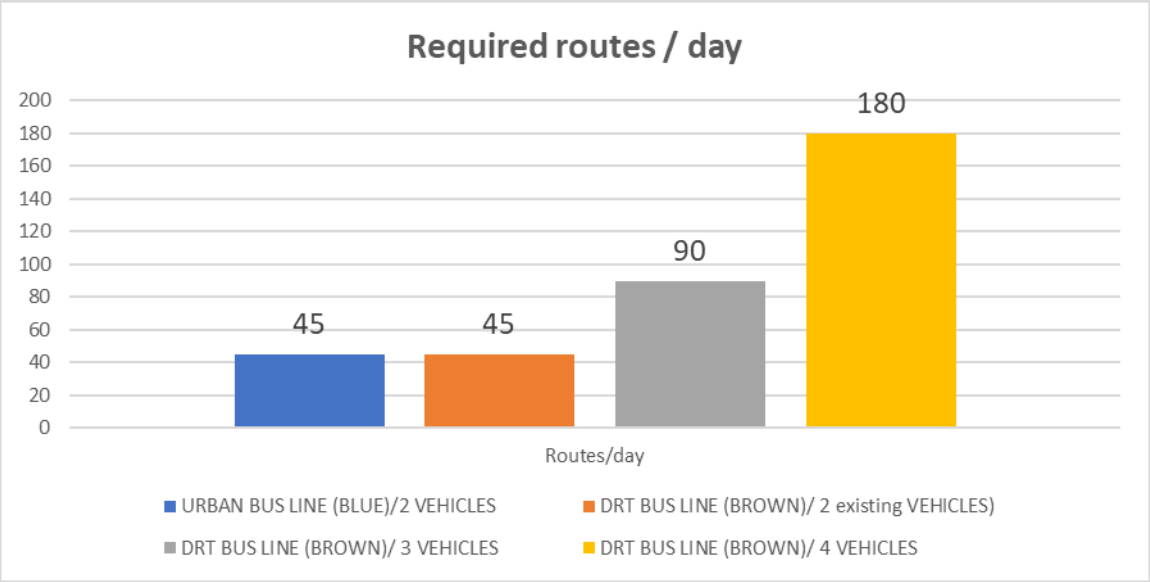


Figure 23: Required routes/day

For the scale of the city of Igoumenitsa the number of 180 routes/day already seems excessive. Also this scenario (DRT bus line/4 vehicles), as shown in the sensitivity analysis above, in the event of a decrease in expected demand of more than 20%, results in negative values of the IRR index (-7.01%), mainly due to higher investment costs. This scenario is therefore considered to be rejected in relation to the other 3 alternatives.

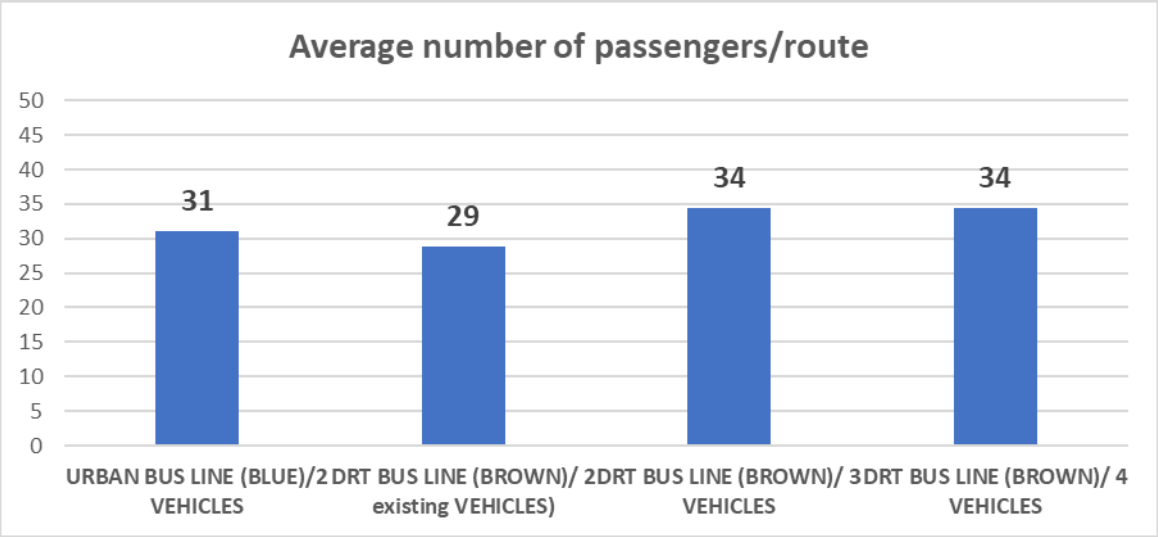


Figure 24: Average number of passengers/route

The figures in the above Chart show that the number of 29 to 34 passengers per route is the variation that gives is the variation that gives contributory economic indicators (financial analysis).

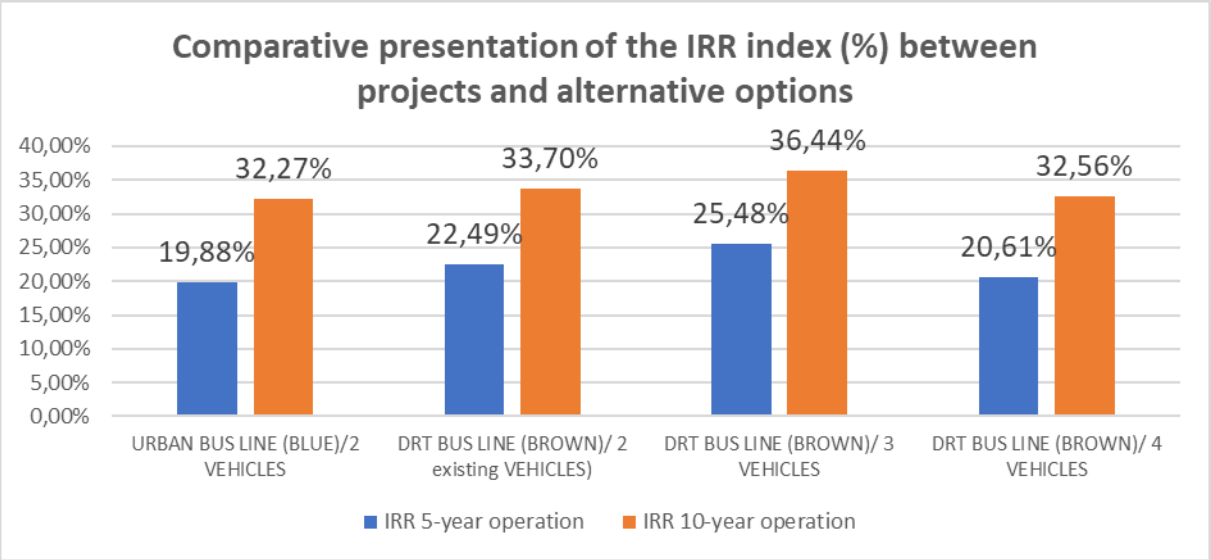


Figure 25: Comparative presentation of the IRR index (%) between projects and alternative options

The figures in the above chart show that the best return on investment index (IRR) equal to 36.44% (10 years) is shown by option 3, DRT bus line with 3 vehicles. However, the other 2 alternatives (Urban bus line (blue) and DRT bus line (2 vehicles)) have very satisfactory IRR indicators, equal to 32.27% and 33.70% (10 years).

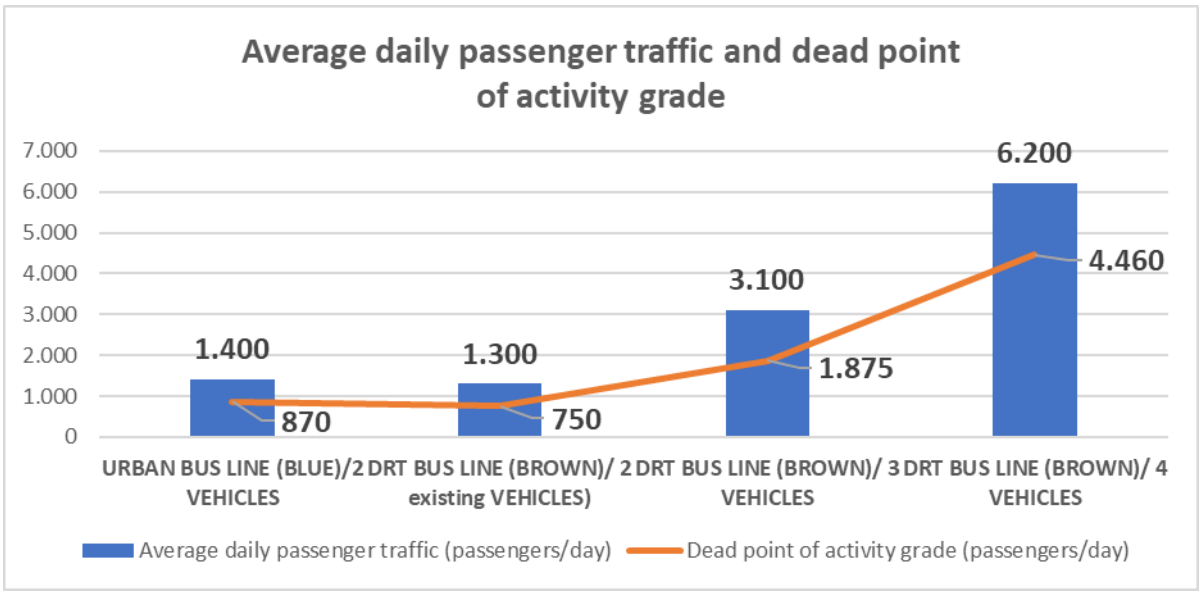


Figure 26: Average daily passenger traffic and dead point of activity grade

According to the chart above it appears that the dead point of the activity grade for urban bus line (blue) and DRT bus line (2 vehicles) is at lower prices (low risk options) than those of alternative 3 (DRT/3 vehicles). However, the profit margin is greater in the choice of operation of the 3 buses, since the difference in the average daily price (3,100 passengers/day) from the price of the dead point of activity (1,875 passengers/day) is greater, at 1,225 passengers/day, assuming that a satisfactory level of service quality is to be maintained. The other 2 options have corresponding prices of 530 passengers/day (blue line) and 550 passengers/day (brown line/2 existing buses, however in case of increase demand at "1,400 passengers/day" prices and thus an increase in profit margins will be forced to respond with a low level of service i.e. overfilling vehicles.

For these reasons, the proposal of this study is a combination of the operation of the blue line with 2 vehicles for 365 days a year and operation of a DRT line for 7 months/year with 1 additional bus.

Table 24: Financial risk levels for each phase of the project

Project phases	Financial risk levels	Description
Phase 1. Concept definition	Low	The project under study is already widely accepted by all stakeholders (Region of Epirus, Regional Unit of Thesprotia, Port Authority of Igoumenitsa, Municipality of Igoumenitsa, traffic police) but also by the general public (population) of reference and its area of implementation (City of Igoumenitsa and satellite municipalities).
Phase 2. Pre-feasibility study	Low	The economic resources coming from European projects and regional authorities cover all the pre-feasibility studies and staff costs needed. The results are also particularly encouraging for the further promotion and development of the implementation of the project under study.
Phase 3. Feasibility study	Low	This analysis includes with a high degree of reliability the elements of a complete CBA and Risk Analysis. No significant changes in results from the project's subsequent full CBA are expected.
Phase 4. Project implementation	Low	All the required financial resources needed for the project implementation are founded.
Phase 5. Operation & maintenance	Low	The project's anticipated revenues appear to outweigh its implementation and operating costs, especially in a relatively short analysis period (10-year operation), at around 140%. Considering that the remaining residual value of the works (vehicles, telematics, bus stop infrastructure) there will be overcapacity for the production of additional revenue for even more years ("10 years of operation), then the results of this study should be considered even more satisfactory. There may be a need for equipment and fleet renewal required at about half the time of operation of the project, which have not been taken into account as yet. They will not exceed 20%-25% of the value of the investment costs, which will relate, for example, to the telematics applications, upgrading of equipment of the 2 existing buses, software, etc.). This may require either some funding or some financing

3.2.5 Technical Sustainability and intermodality promotion

Enabling technologies

Technology advancements in telecommunication networks, have contributed in developing high level vehicle tracking and public transport telematics. This technology nowadays in considered fully matured and stable and up to certain degree their value for money in widely accepted. Public transport users are vulnerable as long as they do not get timely and reliable information on routes, schedules and arrivals at bus stops. This is the exact point where GPS enabled AVL systems make a huge difference and have to be deployed at early stages of PT service launch. The same lies for the Demand Responsive Transport (DRT) system which work in a similar manner with the AVL but providing pre-booking and routing interfaces. All systems discussed for these services are to be considered as TRL9 and in most cases - at least as of today - proprietary (licensed) software applications.

Table 25:Enabling technologies for the case study

Enabling technologies	Brief description of the technology and the role (potential role) in the case study
DRT software	TRL 9
Bus Fleet management tool (GPS enabled)	TRL 9
Smart Bus stops presenting dynamic arrival forecasts	TRL 9
Smart travellers' applications (IOS/Android)	TRL 9
Location Based Services for Advertisment on Mobile phone and tv monitors on board	TRL 9

The project is focused on building up new Public Transport services in a city. The only technological aspect of this, is probably the GPS enabled Fleet management, scheduling software applications with their respected hardware installations on board vehicles (modems, on-board-units etc.) and the road infrastructures (passenger information bus stop displays). Nowadays this technology is regarded as full commercial, thus TRL9 level.

Case studies contributions to intermodality promotion and environemtnal impacts reduction

The public transport case alone is considered having a low to medium impact to intermodality. The most important aspect of it, is of course regular interconnection between the port and the intercity bus terminal.

Table 26: Key technical KPs

Indicator	Indicators	Data (real data if available or estimated/expected)
Transport modes integrated	2 modes / Bus and Ferry	No data available other than simulation data derived from the macroscopic transport model used in SUMP
MaaS approach	NO	N/A
Foreseen users	1400 passenger per day	As an indication that can be derived from the modal spit and traffic assignment parts of the traffic simulation findings
Traffic reduction*	% or Co2 emissions	N/A
Pollution reduction*	% or Co2 emissions	N/A
Timetable integrations	YES/NO	
App for final users	YES	There will be a native application for cell phones giving routing information and forecasts for bus arrivals at bus stops along the PT network. A second option suggests the use of a demand responsive transport software (DRT), which will also

		provide adequate interface for booking trips on the go and through a URL.

3.2.6 Other materials and contacts

The main methodological documents related to case study is the "Guide to CBA Analysis and Investment Projects – Economic Appraisal Tool for Cohesion Policy 2014-2020".

The contacts of the main stakeholders working on case study are summarized in the table below.

Table 27: List of contacts

Name	Position/ Role	e-mail	Telephone
Mr. Ioannis Lolos	Mayor of Igoumenitsa	grafeio.dimarxou@1345.syzefxis.gov.gr	+30 2665361101
Mr. Pantelis Karapiperis	Planning Office Manager, EU Programs Manager	p.karapiperis@1345.syzefxis.gov.gr	+30 26653 61155
Mrs. Ioanna Tzovara	Civil/Transport engineer	gtzovara@gmail.com	+30 2665361234
Mrs. Xristina Gogolou	Architect Engineer	xri.gogolou@gmail.com	+30 2665361236

Full synergy with the SUMP monitoring and evaluation committees as this pilot activity will not only be selected for the pilot but will practically assume the new public transport profile of the city for years to come.

3.3 Case Study 2: The Emilia-Romagna Region case study, Italy

3.3.1 Emilia-Romagna Case Study A. Improving the passenger rail service between Ravenna, Rimini and Bologna reducing the time to reach the final destinations.

Brief case study description

The Emilia-Romagna case study A refers to improving the passenger rail service between Ravenna, Rimini and Bologna reducing the time to reach the final destinations. The aim of the pilot is to revitalize the railway line Ravenna-Rimini (along the Adriatic coast) and reduce the travel time between Bologna, Rimini and Ravenna. Given the touristic vocation of such places, in recent years local authorities communicated the need to promote better public transport for tourists as a measure to reduce negative externalities (e.g. congestion, environmental impact, road safety, etc.). Trenitalia and RFI declared to be aware of the need to work on these topics, looking for "soft solutions" allowing to act in short time. In fact, the train lines connecting Rimini with Ravenna and Ravenna with Castel Bolognese are single track lines as shown in the Figure below. The infrastructural improvement of these lines requires big investments and long times, so it is more helpful that Inter-Connect project focussing more on defining and testing soft solutions able to reduce the train travel times.

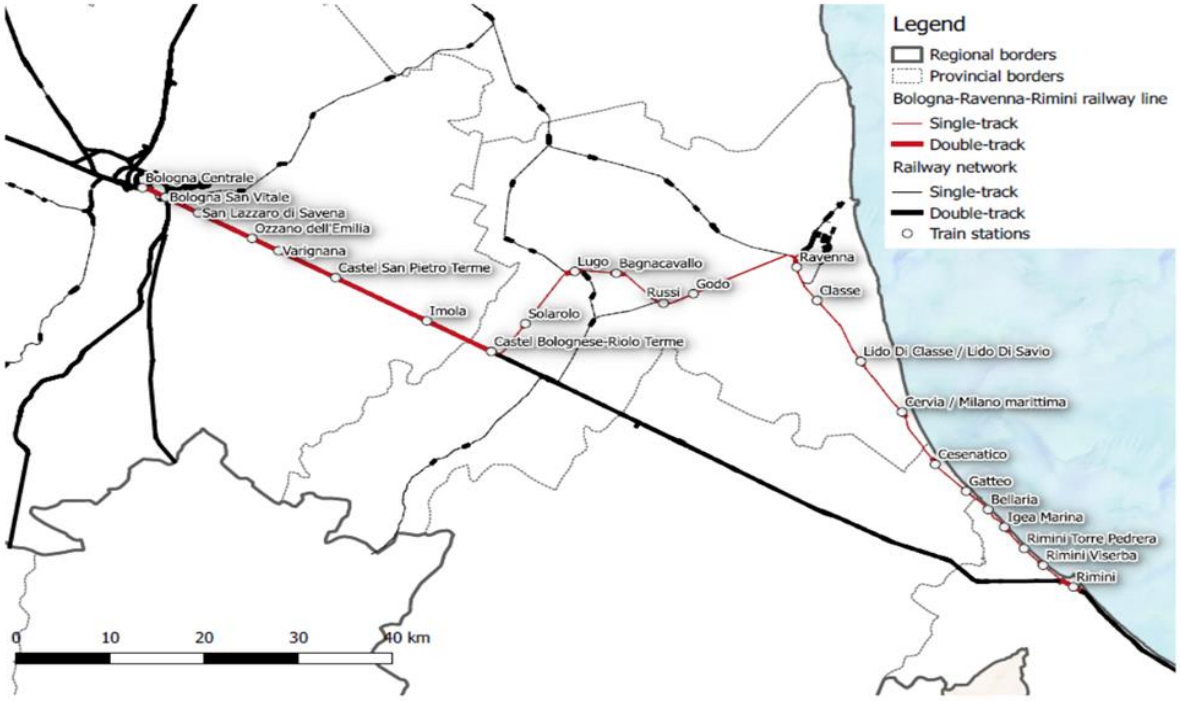


Figure 27: Rail infrastructures in the pilot area

In particular it is important to work in travelling time reduction among Bologna, Ravenna and Rimini in order to increase the attractiveness of the train services for tourists and commuters.

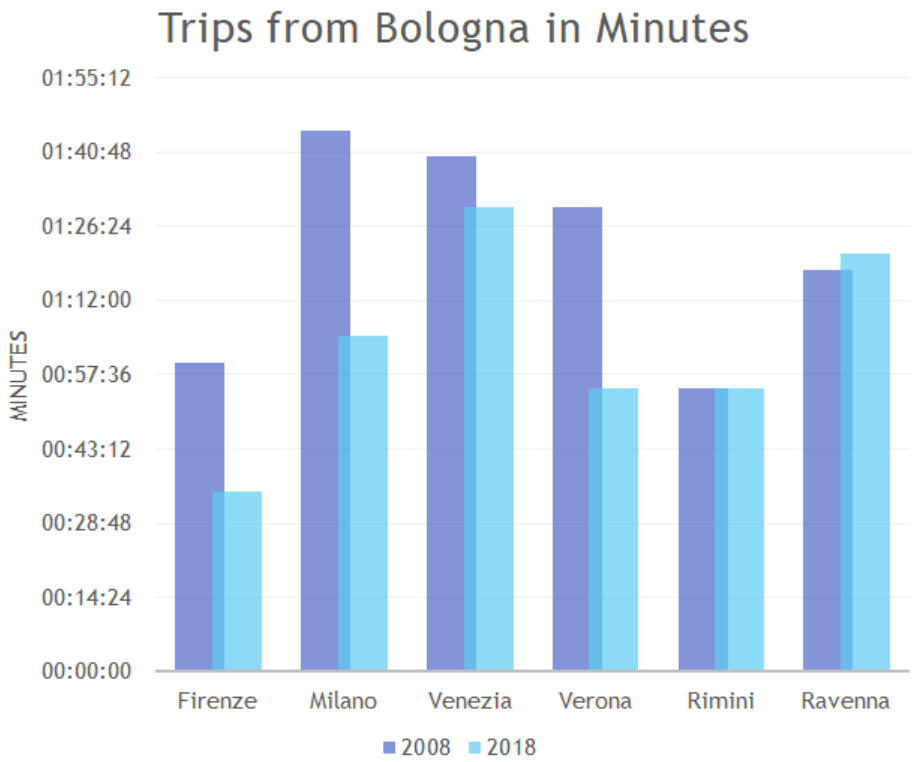


Figure 28: Travelling time (in minutes) among Bologna and six different cities.

As summarized in the table, there was a relevant travelling time duration reduction among Bologna and the main Italian capital cities. This is related to the high-speed trains services activated in the last decade that halve the travelling time among the main Italian cities. On the contrary this travelling time reductions didn't happen among the Emilia-Romagna main cities as the train infrastructures remains quite the same. As evidenced in the scheme, the travelling time among Bologna, Ravenna and Rimini remain quite the same in the last 10 years. From these evidences was born the idea of this case study. Moreover it should also be noted that the reduction in travel times analysed in the Inter-Connect case study was possible thanks also to the new rolling stock introduced by Trenitalia starting from 2019 (Pop and Rock trains) with greater acceleration which, with the same number of stops, allows to reduce travel times. In the table below a synthesis of the case study development phases was summarized.

Table 28: Case study development phases' descriptions.

Case study phases	Case study phases	Brief description of each phase
Phase 1	***Concept definition***	The Emilia-Romagna Region developed the concept of reducing the travel times among Bologna, Ravenna and Rimini in collaboration with all the main public and private stakeholders. The concept was related to the development of soft measures to reduce train travel time without big infrastructures investments.
Phase 2	***Pre-feasibility study***	The pre-feasibility study identified the following technical solution to reduce the travel times: reduce the stops in the train stations with the lowest number of daily users. This study conducted to the reduction of the stops of some trains in two train stations: Russi and Classe.

Phase 3	***Feasibility study***	As the reduction of the train stops generated relevant problems for the users travelling from these stations, Emilia-Romagna Region and Trenitalia, in collaboration with the local public transport operators, had defined new public bus services connecting the two affected stations with the closest train stations where the train stops were still active.
Phase 4	***Project implementation***	The implementation phase started with a first testing period from December 2018 until December 2019. During this phase it was necessary to revise some train timetable in order to fit with the request of the users (mainly commuters and students). In a second moment, due to the introduction of the new rolling stocks (Pop and Rock trains), more time performing in comparison to the old trains, it was possible to guarantee a travel time reduction also without cancelling the two train stops of Russi and Classe.
Phase 5	***Operation & maintenance***	During the operation phase it was possible to develop synergies with the local public transport operators and firms in order to develop more attractive intermodal public transport solutions for workers and citizen.

Phase 1. Concept definition

The Emilia-Romagna Region developed the concept of reducing the travel times among Bologna, Ravenna and Rimini in collaboration with all the main public and private stakeholders. The concept was related to the development of soft measures aimed to reduce train travel time without big infrastructures investments. The concept was defined and developed in the main regional institutional and political documents. The main objectives of the project were to:

- Reduce the travel time among Bologna, Ravenna and Rimini from 81'-83' to 69' in both the directions. The objective is to reduce the travel time of 12'-14';
- Reduce the travel time among Ravenna and Rimini serving in a best way all the Romagna coastal cities. The objective was to reduce to less than 1 hour the travel time among Ravenna and Rimini in both the directions;
- Increase by at least 3% the direct train traveling on this line (from 12.475 to 12.888).

The general objective is to generate benefits on all the regional trains network as summarized in the table below.

Figure 29: Emilia-Romagna train network

Phase 2. Pre-feasibility study

The pre-feasibility study identified the following technical solution to reduce the travel times: reduce the stops in the train stations with the lowest number of daily users. This study conducted to the reduction of the stops of some trains in two train stations: Russi and Classe (see figure below). In the case of Russi the stops of the most used trains were secured, in the case of Classe the plan was to cancel all the train stops.

Figure 30: Train stations in the pilot area

These are the main data related to the two interested train stations:

- Godo. In average, there were 110 passengers per day. They were mainly commuters with a seasonal ticket. The daily train stops were planned to be reduced from 34 per day to 12 per day;
- Russi. In average, there were 70 passengers per day. Also in this case they were mainly commuters with a seasonal ticket. The daily train stops before the project interventions were 20 per day.

Phase 3. Feasibility study

As the reduction of the train stops generated relevant problems for the users travelling from these stations, Emilia-Romagna Region and Trenitalia, in collaboration with the local public transport operators and municipalities, defines new public bus services connecting the two affected stations with the closest train station where the train stops were still active. In order to guarantee these additional bus services a collaboration and dialogue with the local public transport operator, Start Romagna, was activated. The introduction of new rolling stock allowed to reactivate all the stops in the two identified train stations.

Phase 4. Project implementation

The implementation phase started with a first testing period in December 2018 until December 2019. During this phase it was necessary to revise some train timetables in order to fit with the requests of the users (mainly commuters and students).

Figure 31: New rolling stocks of Emilia-Romagna Region. Rock train (Source: Trenitalia, 2020).

In a second moment, due to the introduction of the new rolling stocks (Pop and Rock trains), more time performing in comparison to the old trains, it was possible to guarantee a travel time reduction also without reducing the daily stops in the Russi and Classe train stations.

Phase 5. Operation & maintenance

During the operation phase it was possible to develop synergies with the local public transport operators and firms in order to develop more attractive intermodal public transport solutions for workers. In particular, thanks to the financial support of a big factory in the Bologna metropolitan area and of the involved municipalities, it was possible to coordinate the train timetables with two bus services serving the industrial area and the city centre. This was possible thanks to an increase of the train services from both the directions during the peak hours (7 – 9 in the morning and 16 – 18 in the afternoon). Two bus lines integrated with the train timetables serving all the urban areas as evidenced in the table below.

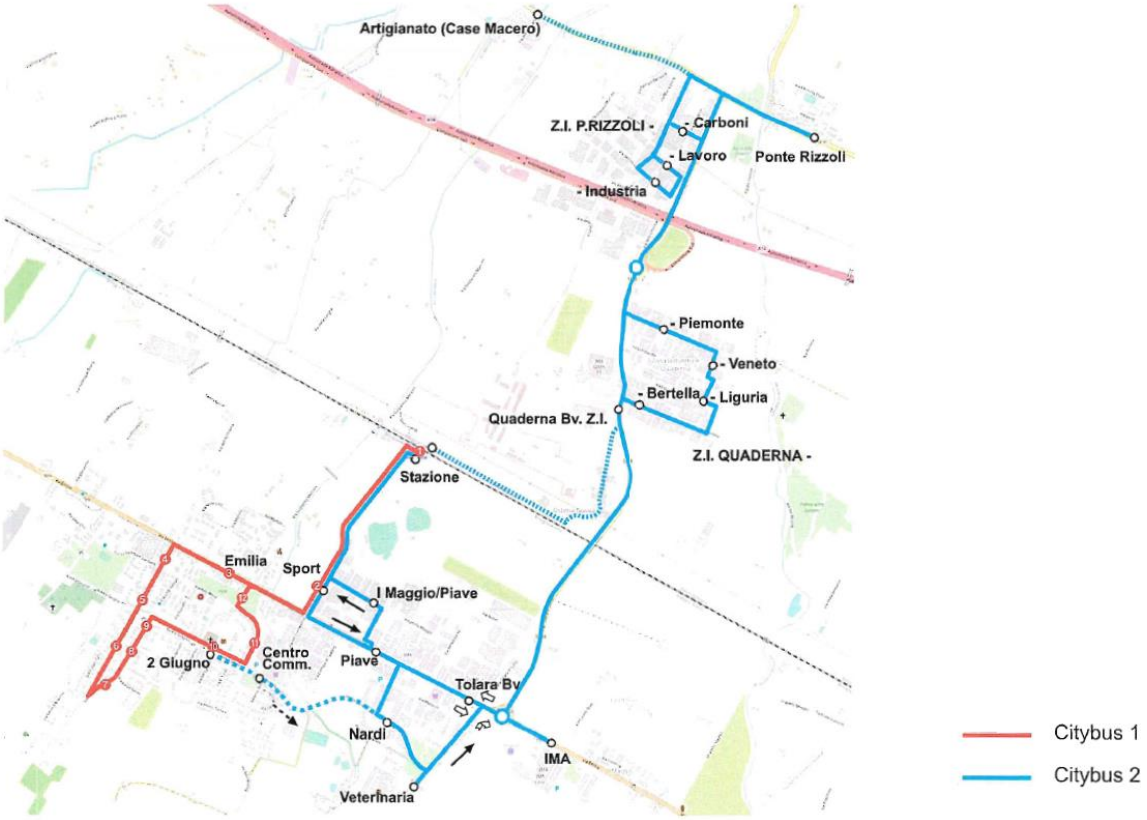


Figure 32: General scheme of the new bus service integrated to train in Ozzano Emilia, Bologna.

The integration of the fares system was crucial for the development of such a solution and integration among train and local buses. This initiative was also defined and supported by the Metropolitan Sustainable Urban Mobility Plan (SUMP).

Stakeholders engagement

The objective of this paragraph is to identify the most relevant case study stakeholders and analyse their main roles. In fact, it is important to understand their potential roles and positions in the case study definition and implementation, their interests and objectives, useful to define the local action plans, paving the way to the replication of the Inter-Connect case studies.
Stakeholder involvement is generally considered a good practice, not only to have a good technical outcome of project activities but also to guarantee the durability of the project results and effectiveness of actions
The result of this mapping activity can support the identification of possible conflicts and coalitions between stakeholders, and how these may affect the action plan definition process in terms of geographical coverage, policy integration and resource availability.

Main public and private stakeholders involved

Emilia-Romagna Region and Trenitalia s.p.a are the two main stakeholders involved in the present pilot project:

Regione Emilia-Romagna. The Emilia-Romagna Region in 2011 initiated the implementation of the powers provided by the national legislative decree n. 422 of 1997 on railways of regional interest. These rules have led to the progressive transfer from the State to the Region of the railway lines under concession and the attribution of the railway services of their own competences also carried out on the national network. In particular, in the matter of regional and local rail transport, the Region is responsible for all the planning, administrative and financing functions of public transport services, excluding the safety functions that remain the responsibility of the state. The Region also pursues the improvement of rail transport performance and integration with national transport, with urban and local mobility systems, with air and maritime transport systems, and also with freight logistics management systems. The Emilia-Romagna Region is directly involved in the activities of maintaining efficiency and strengthening the regional railway lines and rolling stock, as well as in improving safety conditions, financing the railway sector with resources both own and transferred by the State.

Trenitalia s.p.a. is a company 100% owned by Ferrovie dello Stato Italiane (Italian State Railways). It is the main Italian company operating passenger rail transport. The Regional division of Trenitalia provide rail local public transport service in accordance with Legislative Decree 422/97 (Railway Liberalisation), through service contracts entered with Emilia-Romagna Region. In Emilia-Romagna Region, where Trenitalia operate in a consortium with TPER (namely Emilia-Romagna Passenger Transport), the service contract has been extended. Through Service Contracts, Emilia-Romagna Region details quantity of services, quality parameters, punctuality and regularity (these parameters shall be granted not to incur in penalties), fares (price of tickets and subscriptions), times, frequency, types of trains, number of carriages, stations served, number of stops, ticket offices, etc.

Table 29: Stakeholders involved in the case study

Type of stakeholder	Stakeholders and brief description	Role in the case study
Public authority / decision makers	• Emilia-Romagna Region • Municipalities	The Emilia-Romagna Region was the catalyst and promoter of the initiative in accordance with Trenitalia in the framework of the of the service agreement.
Private operators	• Trenitalia • Tper • StartRomagna • Firms (mobility manager)	Trenitalia was the implementer of the measures in agreement with the Emilia-Romagna Region. Public transport company provide additional bus services in the station where the train stops were reduced. Firms activated additional public transport services for workers in cooperation with the Region.
Citizen/Customs	• Tourists • Commuters • Schools • Users associations	Commuters associations were the main target of all the public consultation events held during the pilot definition and implementation phases.
Others	/	/

Engagement levels

The level of stakeholders' commitment increases with the responsibility it is given to them. Higher commitments mean better results but also higher expectations from the stakeholders.

Table 30: Level of engagement of stakeholders

Stakeholder	Level of commitment	Brief description of the commitment level
Regione Emilia-Romagna	Empower	Initiative promoter
Trenitalia	Empower	Initiative promoter
Municipalities	Collaborate	Consultation with the municipalities involved in the train stop reduction.
Local Public Transport companies	Collaborate	Provider of the bus services where the train stops were reduced
Users associations	Consult	Observations on difficulties generated by the introduction of the new timetable.

This table underline the key role of Emilia-Romagna region, in strict collaboration with Trenitalia as promoter of the initiative. Fundamental is also the full involvement of involved municipalities and local public transport operators. User associations involvement is fundamental in order to map the commuters key needs and problems.

Stakeholders influence-interests matrix

Table 31: Influence-interest matrix

	Low Influence	High influence
Low stake	/	Users associations Public transport companies
High stake	/	Emilia-Romagna Region Trenitalia

This table underline the key role of Emilia-Romagna Region and Trenitalia as key stakeholder of the initiative.

Engagement Strategies

One aspect to be addressed is the means of engaging stakeholders to improve the efficiency and effectiveness of their involvement and to avoid disputes. There are several specific techniques for achieving stakeholder participation.

Table 32: Engagement strategies

Engagement strategies	Do you use this strategy in your case study? (Yes/No)	Brief description of the engagement strategy used
Invitation Letters	No	
Questionnaires and Surveys	No	

Exhibitions and Road Shows	No	
Public Meetings	Yes	Several public meetings with commuters and local associations
Use of the full range of the media	Yes	Mainly newspaper articles
Structured interviews	No	
Forums	No	
Focus Groups	No	
Advisory Committee	No	
Workshop	No	
Round Table Discussions	Yes	Held in the framework of the Inter-Connect project. The round table were mainly technical meetings among experts.
Public-private agreement	No	
Participatory processes	Yes	
Memorandum of Understanding (MoU)	No	
Others (please add)	No	

The main stakeholder engagement strategy was the institutional consultations carried out regularly in 2018 with the Regional Committee of users of the regional rail transport (CRUFER). CRUFER sees the involvement of 11 local commuter committees and 3 consumer associations. These meetings concerned intense plenary and bilateral activities with the committees directly concerned, which fully played their role of transmission to the user community and to the Region.

Institutional and Political Sustainability

This paragraph analyses the policies and governance schemes supporting the Inter-Connect case studies definition and/or implementation and management.

Main national and regional policies supporting the case studies

The Regional Integrated Transport Plan (PRIT) is the main transport planning tool at regional level. It provides the overall regional policy framework, for both infrastructures and mobility demand governance actions. The main tool for long-term planning and long-term mobility of the Emilia-Romagna Region, the Integrated Regional Transport Plan - PRIT 2025 is currently being developed and updated.

PRIT 2025 states that railway transport, being a “rigid”, “non-flexible”, mode of transport must be integrated with all the other transport mode to be efficient and effective. In particular, to achieve an integrated network, hubs and nodes of transport network must be physically connected to enhance accessibility. In particular, the enhancement of the bus-train integration, also with timetables, and other soft solutions. Also, train-train integration must be pursued in relation to high-speed train accessibility, that is not present in all cities (Bologna and Reggio Emilia).

Other measures relate to modernisation of train and bus stops and improve train boarding comfort by raising platforms. Intermodal train-bicycle transport is improved by subsiding folding bike purchases and by reducing bike train pass cost. This political tool is the main political and institutional reference of this pilot.

Moreover, it is important to add that since September 2018, the Emilia-Romagna Region introduce a new policy regarding the free of charge access to public transport in 13 cities for people owing train seasonal tickets. Thanks to this measure it was possible to:

- + 48% of students with an annual subscription;
- + 26% of other people with annual non-student subscription;
- -3% of those who had monthly passes.

This is the regional political framework where such interventions on train was defined and implemented.

Governance scheme adopted

With the regional law n. 20 of 2011, the Region modified the framework law on public transport (LR 30/98) by providing long-term tenders, in order to encourage investments, to open up to liberalization of the sector and to aim for the strong renewal of the vehicle fleet to give greater quality to the system and services.

During the December 2018 timetable changed, the effects of the reprogramming actions decided in previous years were consolidated, in particular as regards the connections with Romagna, through the revision of the Bologna-Ravenna-Rimini offer with a greater commitment of the Emilia-Romagna Region and of the railway company of approximately 300,000 Km * train on an annual basis. This is the most substantial offer to increase the offer in the last 10 years. To this intervention was added a strengthening of the summer services Bologna-Ravenna-Rimini.

From 2019 the management of the Regional Railway Service is governed by a service contract with a single manager, participated by Trenitalia SpA and Tper, with a validity of 15 years extendable by another 7. This contract, which sees a production of over 18,500,000 trains * km / year, equal to a value of approximately € 150 million / year, concerns the service provided both on the national and regional networks, thus allowing complete integration. As part of the new service contract, the renewal of the entire fleet is foreseen, to be paid by the operator.

With the reference to the Ozzano Emilia bus integration, the governance scheme adopted was a collaboration, in compliance with regulation 13/70 of 2007/08, between companies, rail transport and buses that showed willingness to intervene by changing their offers. The Region took care of the needs. RER has created an operational and legislative framework by stimulating collaboration in compliance with the provisions.

Financial Sustainability

This paragraph collects quantitative and qualitative information on financial sustainability of the Inter-Connect case studies. The aim of the financial sustainability analysis carried out in this chapter is to evaluate if the Inter-Connect case studies are/will be supported by a strong and replicable business model.

General information on the case study's financial scheme

The Emilia-Romagna Region has invested around € 3 million to finance the improvements described in this pilot. These funds are part of the financial envelope used by the Region for the management of the regional railway network.

These funds derive from national transfers from the National Transport Fund as previously described. Specifically, the level of services provided in 2017 concerned a total of 18,100,000 trains * km for regional services, for a fee equal to 137 million euros. This consideration is made up of 124 million euros of resources transferred from the State through the National Transport Fund and about 13 million euros of regional resources.

Case study's general costs

Below is a summary of the general costs which total around 3 million euro / year.

Table 33: Case study's general costs

Cost	Quantification (€)	Notes
Total investment required in € (approximately)	3 millions Euro per year (about)	Greater commitment of the Emilia-Romagna Region and the railway company of approximately 300,000 Km * train on an annual basis.
Foreseen investment duration (years)	N.A	

Expected economic resources and their duration

This paragraph intends to map the economic resources supporting the definition and/or the implementation of the Inter-Connect case studies.

Table 34: Expected economic resources

Kind of funds	Availability and date of availability	State of the financing	Duration	Brief description
European funds	Yes	Activated	UNA TANTUM	Inter-Connect funds cover some public events costs
National funds	Yes	Activated	1 Year	National fund for public transport
Regional funds	Yes	Activated	1 Year	Regional funds for public transport
Private funds	No	/	/	
Subsidies/ Incentives	No	/	/	
Internal/own economic resources	No	/	/	
Others	No	/	/	

The quota of the total project costs covered by internal economic resources was 100%.

Foreseen revenues streams/internal economic resources

In order to evaluate the financial soundness of the Inter-Connect case studies, it is important to monitor not only the costs but also the foreseen/possible revenues streams coming from a future implementation of the case studies' actions.

Table 35: Foreseen/possible revenues streams coming from a future implementation

Revenues streams	€ (Estimation)	Description
Increase of Public transport tickets sales	N.A	Faster train services can increase the number of users using trains

No details are available.

Case study's financial soundness

This paragraph intends to synthetize all the quantitative and qualitative data collected in the previous paragraphs in order to evaluate the case studies financial soundness and risks levels.

Table 36: Financial risk levels for each phase of the project

Project phases	Financial risk levels	Description
Phase 1. Concept definition	Low	Studies conducted by internal staff. No financial risks.
Phase 2. Pre-feasibility study	Low	Studies conducted by internal staff. No financial risks.
Phase 3. Feasibility study	Low	All the costs are covered by national and regional funds dedicated to this initiative.
Phase 4. Project implementation	Low	All the costs are covered by national and regional funds dedicated to this initiative.
Phase 5. Operation & maintenance	Low	All the costs are covered by national and regional funds dedicated to this initiative.

Technical Sustainability and intermodality promotion

This paragraph intends to analysis the key technical and technological aspects of the Inter-Connect case studies in order to understand the enabling technologies supporting the planning and/or the implementation and the management of the Inter-Connect case studies. A specific focus is dedicated to evaluating the practical solution supporting the intermodality promotion.

Enabling technologies

No enabling technologies. This is a managerial innovation.

Case studies contributions to intermodality promotion and environmental impacts reduction

This paragraph analyses the key numbers allowing to evaluate the case study contributions (or foreseen contributions) to the promotion of the transport intermodality promotion.

Table 37: Enabling technologies for the case study

Indicator	Indicators	Data (real data if available or estimated/expected)
Transport modes integrated	Number and mode (train, bus, ship, ferry, airplane, bikes, etc.)	Train and Bus
MaaS approach	YES/NO	Yes
Foreseen users	Number	N.A
Traffic reduction*	% or Co2 emissions	N.A
Pollution reduction*	% or Co2 emissions	N.A
Time table integrations	YES/NO	Yes
App for final users	YES/NO	Yes
Others	…	

The revision of the Bologna-Ravenna-Rimini offer with a greater commitment from the Emilia-Romagna Region and the railway company of approximately 300,000 Km * train on an annual basis. It is the most substantial offer increase intervention in the last 10 years and has started since 13 December 2018. Data relating to expectations of expected increase in users are not yet available.

Other materials and contacts

The main contacts of the main stakeholders working on your case study are:

- Andrea Normanno: andrea. normanno@regione-emilia-romagna.it
- Cesare Sgarzi: cesare.sgarzi@regione-emilia-romagna.it

3.3.2 Emilia Romagna case study B. Extension of the current bus "Romagna smart pass" tourists tickets to rail along the Romagna attractive cities, to promote intermodality and public transport in Romagna.

Brief case study description

The Emilia-Romagna Inter-Connect case study B is referring to the extension of the current bus "Romagna smart pass" tourist tickets to rail along the Romagna attractive cities, to promote intermodality and public transport in Romagna.
The definition, planning and implementation of this pilot is possible thanks to the work and the cooperation schemes developed among the local public transport operator (Start Romagna) and the national rail operator (Trenitalia) with the political support of the Emilia-Romagna Region. Thanks to this collaboration, in the framework of the Inter-Connect project, it was possible to launch the Rail Smart Pass, a special and integrated travel ticket that enables tourists to discover the whole Romagna region using all the public transport solutions (buses and trains). It is the first time such a

collaboration was developed in the Emilia-Romagna region and it is also one of the first time at national level that such a collaboration was activated.
The Rail Smart Pass was defined starting from another important integrated ticket launched by Start Romagna some years ago and integrating all the local buses operating in the Romagna region: the Romagna Smart Pass. This integrated bus ticket is operative on 3 provinces (Ravenna, Forlì-Cesena and Rimini), over 80 municipalities, 5,551 km of road, over 150 lines and 6,000 stops served by over 600 vehicles. The Romagna SmartPass is the easiest, fastest and most beneficial ticket to get around in Romagna. It lets to board at any stop and for any destination on the Start Romagna network for 3 days (11 €) or 7 days (22 €). Thanks to specific commercial agreements with some local touristic attractions, with Romagna Smart Pass it is possible to access some the most beautiful places of interest and entertainment in the region at reduced rates. Museums, theme parks or thermal spas. The full list of discounted places on the special page at the website startromagna.it. The tourist shows his valid ticket at the booth of the selected attraction and immediately the set of discounts on admission price are applied. Romagna Smart Pass must be validated on the first journey at the special ticket stamping machines. It is then valid for the chosen period, either for 3 consecutive days (72 hours) or 7 days (168 hours) across the entire Start Romagna network. It is possible to purchase the ticket via the smartphone apps DropTicket and myCicero.
As for the Romagna Smart Pass, the rail smart pass is valid for 3 or 7 days and can be purchased from authorised resellers throughout the region. Start Romagna is working in order to make it possible to sell this ticket online and using the most used integrated transport apps available in the market. All the information about the ticket are available online in Italian and English language[1]. The 3 days ticket costs 25€, the 7 days tickets costs 50€.
The Rail Smart Pass contactless card becomes valid from the moment when it is first validated. Validation is carried out by holding the Pass against the special validating machine located on Start Romagna Buses at the beginning of the first trip. Due to technological problems, at present it is not possible to validate this ticket on the trains but only on Start Romagna buses.
The ticket is valid on the day of validation and for the next two days (3 day Rail SmartPass) or 6 days (7 day Rail SmartPass). The Rail SmartPass must be shown at the request of service personnel. The Rail SmartPass is personal and is not transferable (name and surname are mandatory).
The ticket was officially presented to the public on 23rd November 2019 in Rimini[2]. From this date a first testing period was started in order to test the correct operation of the contactless cards and of the validating systems. This first testing period ended in February 2020. The objective is to have all the system fully in operation by the Summer 2020 when the touristic flows in the Romagna region will be higher.

Table 38: Case study development phases' descriptions

Case study phases	Case study phases	Brief description of each phase
Phase 1	**Concept definition**	The Rail Smart Pass concept was defined during Summer 2018 thanks to a study carried out by ITL-RER as part of the Inter-Connect project. A number of face-to-face sample interviews were conducted with tourists arriving to or departing from Rimini and Riccione train stations and "Federico Fellini" International Airport

[1] https://www.startromagna.it/titoli-e-tariffe/rail-smartpass/

[2] https://www.tribunapoliticaweb.sm/dal-mondo/2019/11/20/45977_sabato-23-nasce-rail-smart-pass-un-unico-biglietto-per-tutti-i-bus-e-treni-che-viaggiano-in-romagna/

Phase 2	***Pre-feasibility study***	*Pre-feasibility study was facilitated by the pre existing Romagna Smart Pass, an integrated ticket valid on all buses in Romagna. Basically, the Rail Smart Pass was an extension to the train of the previous bus ticket. Further information about Romagna Smart Pass are available at the following link:* https://www.startromagna.it/titoli-e-tariffe/romagnasmartpass/
Phase 3	***Feasibility study***	*Terms of feasibility of Rail Smart Pass were defined within an agreement signed by Start Romagna (provider of the local public transport in Romagna) and Trenitalia (responsible for the national railway service). When discussing the present agreement, the technical, economic and management aspects involved in the launch of such a product were also specified.*
Phase 4	***Project implementation***	*Test phase. Started in November 2019, the project is scheduled to run until February 2020. The sale of Rail Smart Pass will begin at Easter 2020 to be fully operational within Summer 2020. The testing period will continue through all of 2020.*
Phase 5	***Operation & maintenance***	*No information available at the moment*

Here some additional information on the different phases are provided.

Phase 1. Concept definition

The concept phase regards the data collection from tourists in order to understand if there is an interest on a train - public transport integrated ticket and if yes which are the main conditions and needs for this new ticket. In order to collect all this information, thanks to the Inter-Connect project, the Institute for Transport and Logistics (ITL) conducted in Rimini during the summer 2018 a survey. The survey aims to collect data on tourist travel experience in Romagna, level of awareness of the existence of a bus integrated ticket (Romagna Smart Pass), mapping tourists' interests on a new kind of integrated ticket (bus+train) and their willingness to pay for it. The Inter-Connect survey campaign in the Rimini territory has been held during the tourist peak summer time (August-September 2018), in particular in 4 working days with consistent in and out tourist flows in Rimini main transport hubs (Rimini airport, Rimini train station and main bus hubs).
The sample is based on 163 interviews. 141 interviews were held in Rimini Train Station, Piazzale Curiel in Riccione and on buses number 4, 8, 11. The remaining 42 interviews were held in the Rimini Airport "Federico Fellini". The interviews in the Rimini train stations and Riccione were held in 3 working days, from the 7th to the 9th of August 2018. The interviews in the Rimini airport were held on the 5th of September 2018 (see the Annex 3 for details on the flights scheduled in the interviews' day).
This paragraph collects the main indications related to the Romagna Smart Pass. The collected information is useful to understand the as-is situation of the Romagna Smart Pass and they allow to provide some indications for its future development.

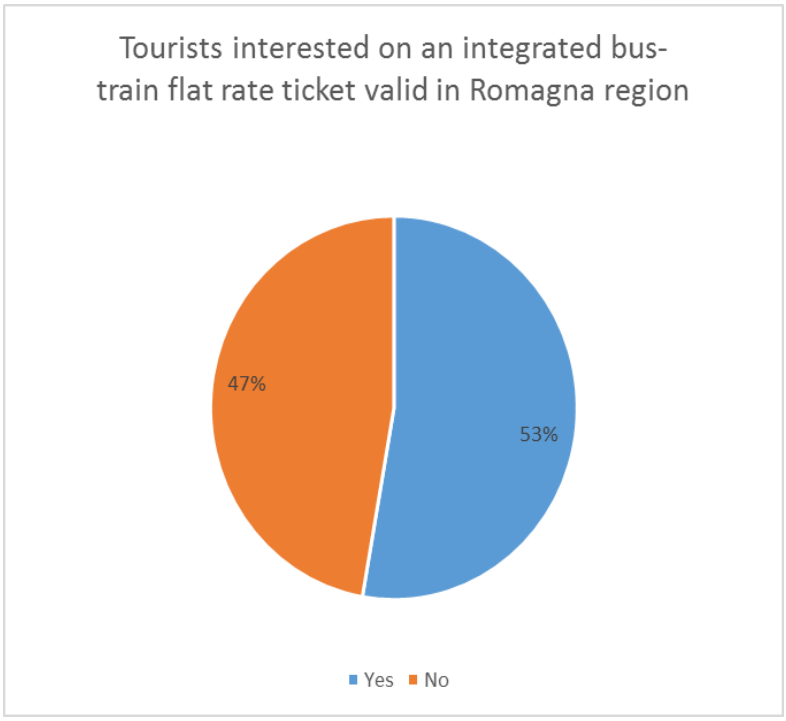


Figure 33: Tourists interested on an integrated bus-train flat rate ticket valid in Romagna region

As evidenced in Figure 1, tourists are quite interested on an integrated bus-train flat rate ticket valid in Romagna region. Analyzing these data more in depth, it is possible to see as the interest on a free circulation ticket is higher among foreigner tourists (57%) compared to Italian tourists (48%).

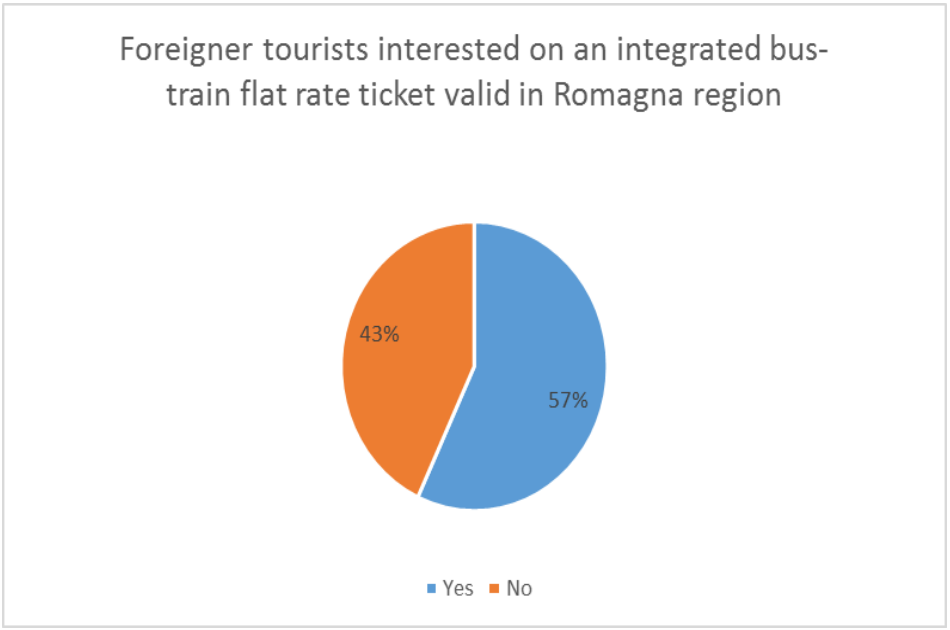


Figure 34: Foreigner tourists interested on an integrated bus-train flat rate ticket valid in Romagna region

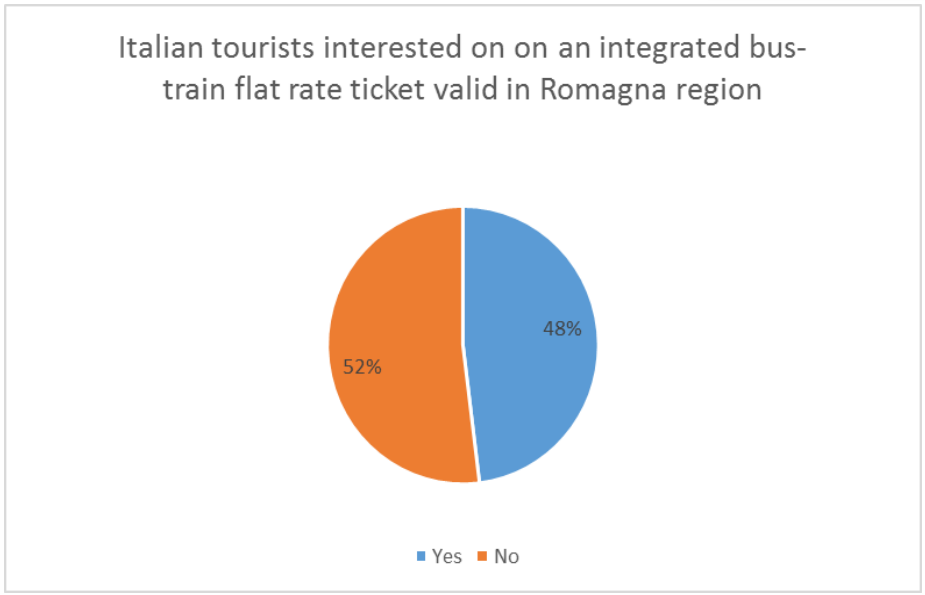


Figure 35: Italian tourists interested on an integrated bus-train flat rate ticket valid in Romagna region

Despite the quite high interest on an integrated bus-train flat rate ticket valid in Romagna region, only few tourists know the Romagna Smart Pass. Only the **18%** of the interviewed tourists know the Romagna Smart Pass. In this case there isn't any relevant difference among foreigner and Italian tourists.

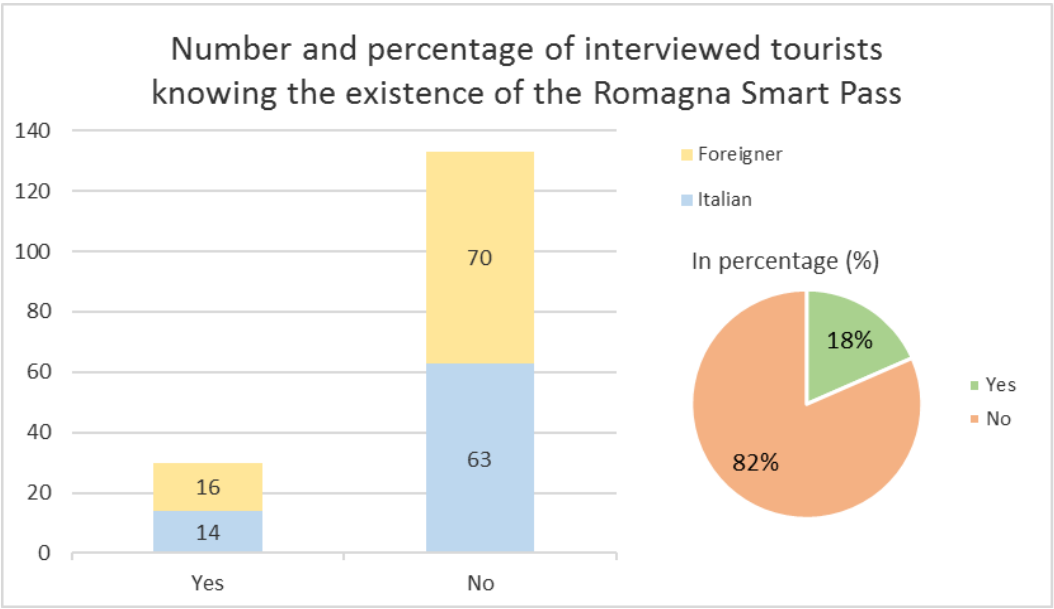


Figure 36: Number and percentage of interviewed tourists knowing the existence of the Romagna Smart Pass

The following Figure shows that the most requested duration for a touristic integrated flat rate ticket is 7 days (40%) and 3 days (33%).

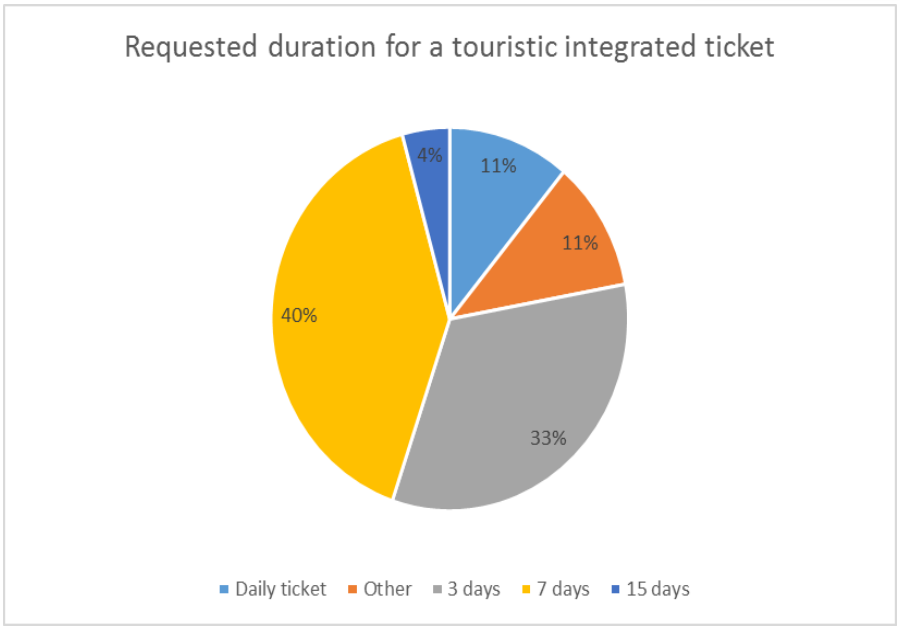


Figure 37: Requested duration for a touristic integrated ticket

The availability to pay for an integrated bus-train flat rate ticket valid in Romagna region has been evaluated using a willingness to pay methodology. For each solution a range of three different ticket prices were proposed. The proposed ticket price ranges were identified in collaboration with Emilia-Romagna Region and Rimini municipality considering the prices of the 2018 Romagna Smart Pass (11€ for the 3 days ticket, 22€ for the 7 days ticket) and the ticket price of the longest possible train path in Romagna region (Riccione-Faenza, 6.65€ for a one-way ticket with local trains).

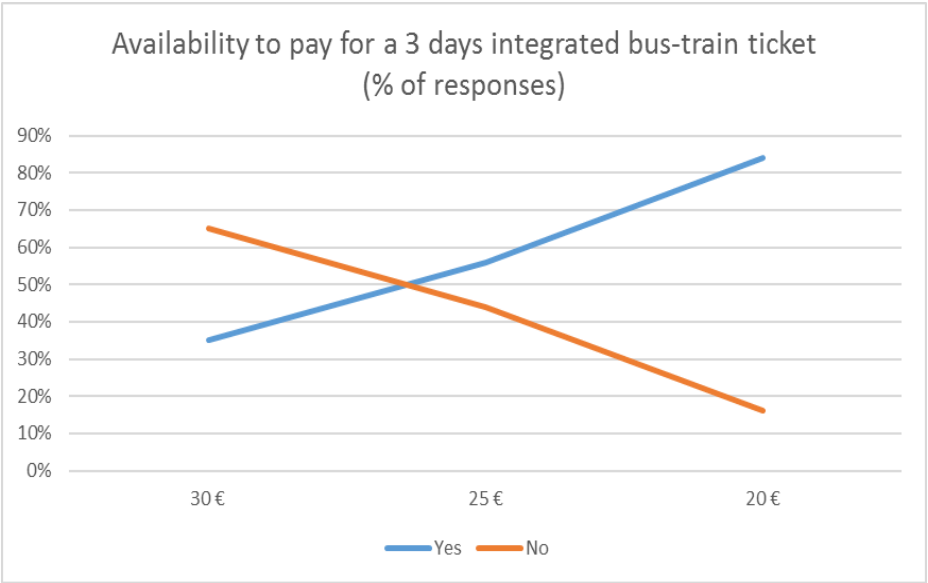


Figure 38: Availability to pay for a 3 days integrated ticket (% of responses)

As evidenced in Figure 6, showing the percentages of tourists available to buy a 3 days integrated bus-train flat rate ticket valid in Romagna region costing 30€, 25€ and 20€, the willingness to pay for a 3 days free circulation ticket is less than 27€.

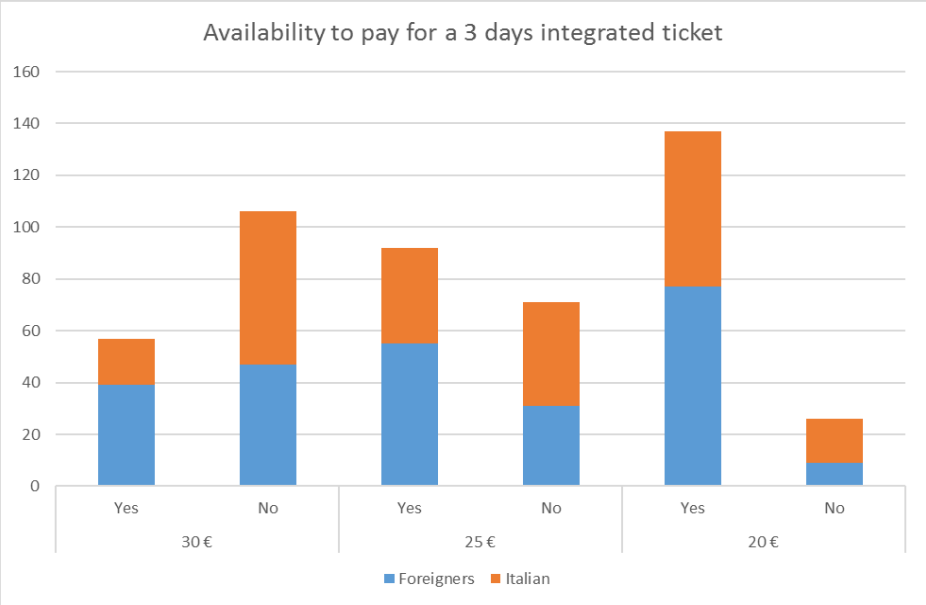


Figure 39: Availability to pay for a 3 days integrated ticket

As evidenced in Figure 7, foreigner tourists are available to spend more for a 3 days integrated ticket compared to Italian tourists.

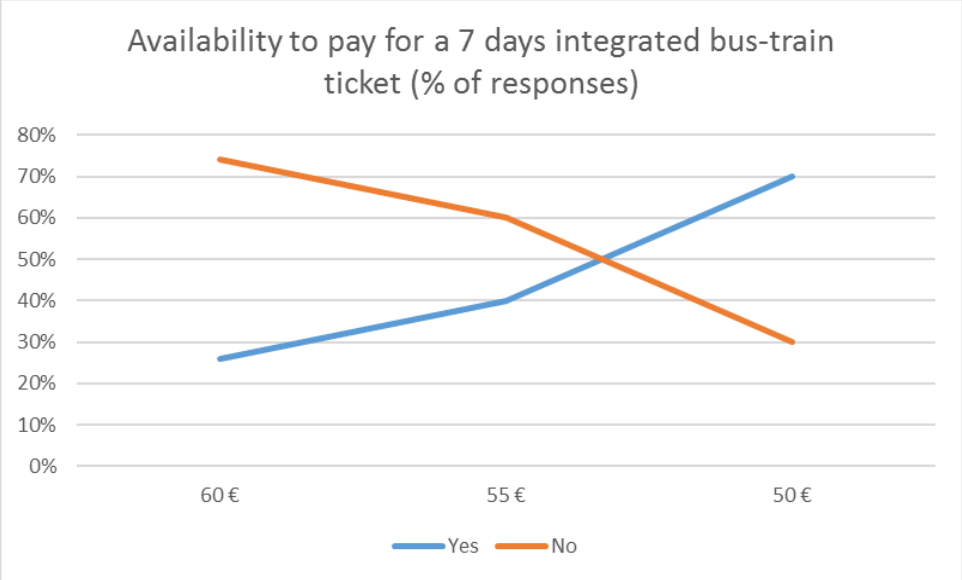


Figure 40: Availability to pay for a 7 days integrated ticket (% of responses)

As evidenced in Figure 8, showing the percentages of tourists available to buy a 7 days integrated bus-train flat rate ticket valid in Romagna region costing 60€, 55€ and 50€, the willingness to pay is less than 55€.

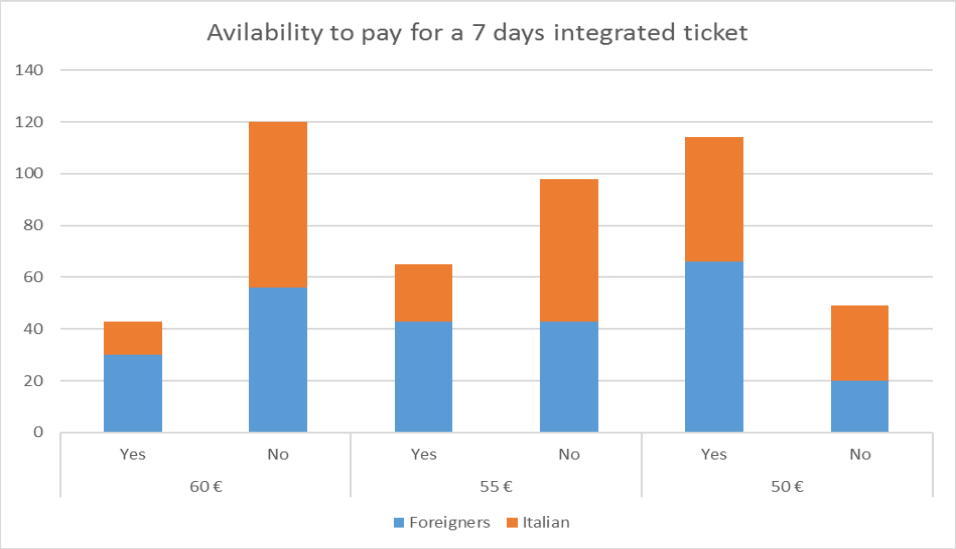


Figure 41: Availability to pay for a 7 days integrated ticket

As evidenced in Figure 9, also in this case foreigner tourists are available to spend more for a 7 days integrated ticket compared to Italian tourists.

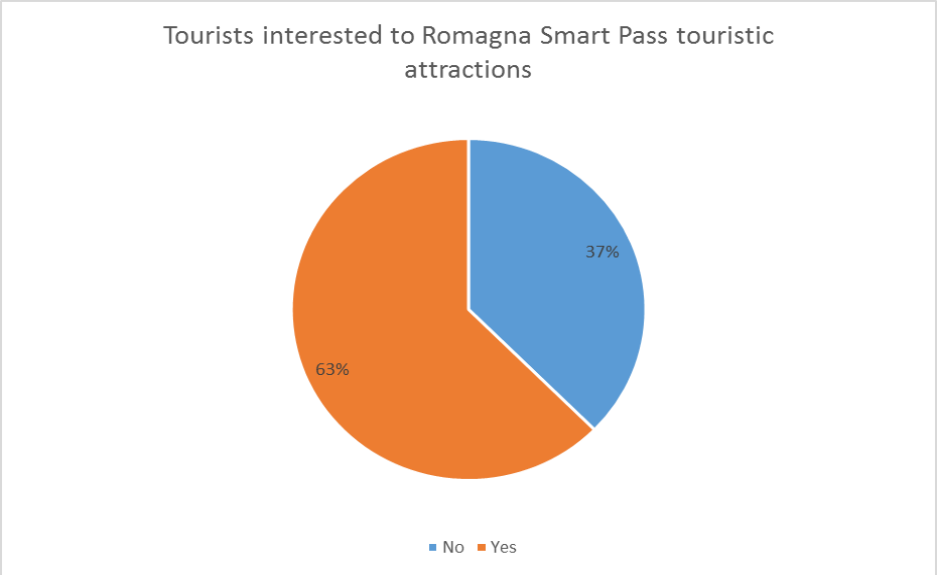


Figure 42: Tourists interested to Romagna Smart Pass touristic attractions

More than 60% of the interviewed tourists are interested and/or had visited at least one of the touristic attractions with a direct agreement with the Romagna Smart Pass (discounts on tickets and services). This percentage shows the importance of these kind of agreements in order to better promote the Romagna Smart Pass among tourists.

Phase 2. Pre-feasibility study

Pre-feasibility study was facilitated by the pre-existing Romagna Smart Pass, an integrated ticket valid on all buses in Romagna. Basically, the Rail Smart Pass was an extension to the train of the previous bus ticket.

Phase 3. Feasibility study

The terms of feasibility of Rail Smart Pass were defined with an agreement signed by Start Romagna (provider of the local public transport in Romagna) and Trenitalia (responsible for the national railway service). When discussing the present agreement, the technical, economic and management aspects involved in the launch of such a product were specified.

Phase 4. Project implementation

The project implementation was started with a first testing period. This first 5 months testing period started in November 2019. This testing period aimed to testing all the technologies and common ticketing standards needed to fully implement this pilot. The full operative sale of Rail Smart Pass will begin at Easter 2020 to be fully operative within Summer 2020. The testing period will continue through all of 2020.

Stakeholders engagement

Main public and private stakeholders involved

Start Romagna and Trenitalia s.p.a are the two main stakeholders involved in the present pilot project.

Start Romagna is an Italian transport company providing public transport in Romagna. The company was set up by the merger of the existing public transport companies operating in the Romagna area: ATM in Ravenna, AVM in Forlì-Cesena and TRAM Servizi (Services) in Rimini. Since 1st January 2012, Start Romagna has taken over the three previous companies incorporating them as for urban and extra urban public transport service in the provinces of Ravenna, Forlì-Cesena, and Rimini. Start Romagna has become the only operator for public transport in Romagna.

Trenitalia s.p.a. is a company 100% owned by Ferrovie dello Stato Italiane (Italian State Railways). As the main Italian company operating passenger rail transport, it is organized in two business areas and central directions: Long Haul Passenger Division (High Speed Trains and national routes) and Regional Passenger Division. The Regional Division of Trenitalia provide rail local public transport service in accordance with Legislative Decree 422/97 (Railway Liberalisation), through service contracts entered with 15 regions and with the autonomous provinces of Trento and Bolzano. Contracts concluded by Regions with Trenitalia shall be multi-annual most of them expiring in 2021. In Emilia Romagna Region, where Trenitalia operate in a Consortium with TPER- namely Emilia-Romagna Passenger Transport- the service contract has been extended until 30th June 2015. At the same time, a tender procedure has been launched for the assignment of railway services for a period of 22 years. Through Service Contracts, the customer, i.e. Emilia-Romagna Region, clearly details quantity of services, quality parameters, punctuality and regularity (these parameters shall be granted not to incur penalties), fares (price of tickets and subscriptions), times, frequency, types of trains, number of carriages, stations served, number of stops, ticket offices, etc. Trenitalia, as a supplier, is paid in return.

Regions, with their own resources, will contribute to fleet renewal (Rolling Stock). The Service Contract defines also the Service Charter, a document allowing customers to know programme commitments made by Trenitalia with the Region, services offered as well as objectives set.

Coordination and dialogue between these two subjects have been possible thanks to the support of Emilia-Romagna Region. A fundamental technical and institutional contribution was given by "Stimer"- the single ticket integrated charging system- for the local and regional public transport. It is based on a division of the territory of Emilia-Romagna into zone fares and on a technological system

of management. According to Stimer, the calculation of tariff rates will pass from the old distance brackets to a zone system (over 400 have been identified by the Region). A contactless card and a single tariff, regardless the means of transport used, will be introduced. Stimer will allow using the same ticket from Piacenza to Rimini just paying a tariff according to the distance covered, not to the means of transport used.

Table 39: Stakeholders involved in the case study

Type of stakeholder	Stakeholders and brief description	Role in the case study
Public authority / decision makers	● Start Romagna ● Emilia-Romagna Region ● AMR (Agenzia Mobility della Romagna) ●	Start Romagna as local public transport company is the enabler of the pilot. Emilia-Romagna Region provide the legislative framework for the train-bus ticketing integration.
Private operators	● Trenitalia s.p.a ● Trenitalia-TPER	Trenitalia, the national train operator, is the second enabler of the pilot.
Citizen/Customs	● Tourists	Beneficiary of the integrated ticketing developed in Inter-Connect.
Others	● Shops in Romagna Region and tourist big attractions (museums, thematic parks, restaurants, etc.)	Commercial activities provided discounts in their activities to tourists owning an integrated ticketing.

For Phase 2 the new regional company is expected to deal with the management of trains at regional level. Since January 1st, 2020, in fact, the new Trenitalia-Tper company has been operating in the regional rail transport in Emilia-Romagna.

Engagement levels

The level of stakeholders' commitment increases with the responsibility it is given to them. Higher commitments mean better results but also higher expectations from the stakeholders.

Table 40: Level of engagement of stakeholders

Stakeholder	Level of commitment	Brief description of the commitment level
Start Romagna	Empower	Initiative promoter
Trenitalia	Empower	Initiative promoter
Emilia-Romagna Region	Empower and consult	Supervisor and contributor (Regional integrated fare system)
Romagna touristic and commercial attractions	Collaborate	Commercial support through discounts for integrated ticket holders.

The Rail Smart Pass pilot project could be carried out only through a close cooperation between Start Romagna and Trenitalia and thanks to a strong institutional and political support by Emilia-Romagna Region. Without a large network of collaborations and institutional and political supports this kind of goals would not have been achieved.

Stakeholders influence-interests matrix

The objective of a systematic analysis of actor relationships is to get a clear picture of conflicts of interest or potential coalitions and to be able to better determine clusters of stakeholders who may exhibit different levels of interest, capacities and interest in the issue in question. For example, this can be done by developing an "Influence-Interest Matrix", which groups stakeholders by their level of influence/ importance.

Table 41: Influence-interests matrix

	Low Influence	High influence
Low stake	/	/
High stake	/	Trenitalia, Start Romagna, Emilia-Romagna Region, Romagna touristic and commercial attractions

Engagement Strategies

One aspect to be addressed is the means of engaging stakeholders to improve the efficiency and effectiveness of their involvement and to avoid disputes. There are several specific techniques for achieving stakeholder participation.

Table 42: Engagement strategies

Engagement strategies	Do you use this strategy in your case study? (Yes/No)	Brief description of the engagement strategy used
Invitation Letters	NO	
Questionnaires and Surveys	YES	Carried out by ITL within the Inter-Connect project at Rimini and Riccione railway station and at Rimini airport, the main tourist hub to get to Emilia-Romagna Region during the summertime
Exhibitions and Road Shows	NO	
Public Meetings	SI	Two local dissemination events for the Inter-Connect project allowed proper public presentations. Additional presentations were organised by Start Romagna in 2019 and 2020.
Use of the full range of the media	NO	
Structured interviews	NO	
Forums	NO	
Focus Groups	NO	
Advisory Committee	YES	Technical meetings between the two stakeholders and Emilia-Romagna Region. Discussions mainly about technical aspects relevant to technologies for the ticket to be used.
Workshop	NO	
Round Table Discussions	SI	Two technical round tables were organised thanks to Inter-Connect project to discuss about the technical aspects associated with the integrated ticket.
Public-private agreement	NO	
Participatory processes	NO	
Memorandum of Understanding (MoU)	YES	To be defined and signed. Beginning of the test period was possible only thanks to the signature of an agreement among Start Romagna, Trenitalia and Emilia-Romagna Region.
Others (please add)	/	

Inter-Connect project had a key role in the beginning of experimentation both enriching technical dialogue and cooperation among experts in the field (round table) and collecting feedback from citizens and tourists (thanks to a survey carried out in summer 2018 and to 2 local dissemination events).

Institutional and Political Sustainability

Main national and regional policies supporting the case studies

The following transport programming tools at regional level granted political support to the present case study:

- **PRIT (Regional Integrated Plan of Transport)**, main reference as for strategies and policies at regional level.
- **Stimer**, base for integrated ticketing of different means of transport in Emilia-Romagna Region.
- **Mi Muovo**, system of regional integrated ticketing of public transport for residents in the region.

PRIT is the main transport planning tool at regional level. It provides the overall regional policy framework, for both infrastructures and mobility demand governance actions. The main tool for long-term planning and long-term mobility of the Emilia-Romagna Region, the Integrated Regional Transport Plan - PRIT 2025 is currently being developed and updated. As a consequence, PRIT 1998 is currently effective. PRIT 2025 updates PRIT 1998 by monitoring implemented action, accounting for changed needs and objectives, that are explained in the following.

The Plan defines a design scenario characterized by several objectives including the Infrastructure System:

- Ensuring accessibility to the territories for people and goods.
- Reducing energy consumption.
- Reducing pollutant emissions and greenhouse gases.

The Plan also aims to promote an integrated mobility system where collective transport plays a key role, encouraging a rational organization of traffic, promoting a culture of sustainable mobility and the development of technological innovation.

Objectives for TPL and sustainable urban mobility by 2025:

- 50% reduction in the number of deaths due to road accidents at regional level
- 20% cycle cycles
- 15% TPL shifting
- Radical renewal of the trains park about 100 trains
- 20% renewal of the bus fleet and trolleybus

For urban policy, it defines the importance of PUMS. Main objectives:

- to ensure high levels of accessibility for people and goods
- to promote public transport services
- to minimize general mobility costs
- to reduce environmental pollution levels.

PRIT 2025 is integrated and related with other plans, such as the agreement for air quality improvement. PRIT 2025 states that railway transport, being a “rigid”, “non-flexible”, mode of transport must be integrated with all the other transport mode to be efficient and effective. In particular, to achieve an integrated network, hubs and nodes of transport network must be physically connected to enhance accessibility. In particular, the enhancement of the bus-train integration, also with timetables, and other ‘soft solutions. Also, train-train integration must be pursued in relation to

High-Speed train accessibility, that is not present in all cities (Bologna and Reggio Emilia). Other measures relate to modernisation of train and bus stops and improve train boarding comfort by raising platforms. Intermodal train-bicycle transport is improved by subsiding folding bike purchases and by reducing bike train pass cost.

Stimer is a single ticket integrated charging system for local and regional public transport. It is based on a division of the territory of Emilia-Romagna into zone fares and on a technological system of management. According to Stimer, the calculation of fare rates will pass from the old distance brackets to a zone system (over 400 have been identified by the Region). A contactless card and a flat rate, regardless the means of transport used, will be introduced. Stimer will allow using the same ticket from Piacenza to Rimini just paying a tariff according to the distance covered, not to the means of transport used.

Mi Muovo is the Emilia-Romagna Region integrated ticketing system. Mi Muovo is a single, integrated travel card for regional public transport available to residents of Emilia-Romagna Region, making travel on public transport much easier and more practical. The base of this integrated ticket is the definition of a regional integrated fare (bus plus train) that substitute the old fare system based on the trip distance to be covered (calculated in kilometers) with a new system based on areas (zones) to be crossed. These integrated fares and ticketing services were launched in late 90's by Emilia-Romagna Region in a European project named STIMER. In the framework of this project the new integrated Mi Muovo tickets were introduced, making traveling in Emilia-Romagna more comfortable, simple and easy, thanks to the use of one comprehensive chip card. During the years Mi Muovo ticket has been further developed allows the access to different transport and mobility services (from bus and train to bike sharing and car sharing), and to electric recharge points for e–vehicles. The system can be potentially extended to all the mobility services, so to improve the implementation of an integrated transport policy at regional scale. The Mi Muovo system not only make payment easier and offer a discount to season ticket holders, but it allows the city and regional authorities to monitor passenger flows. This information helps to better organise the public transport network according to users' needs. The key success factors of the Mi Muovo integrated ticket initiative are:

- Mi Muovo is more than an integrated ticket, it is an integration of transport modes, fares, payment systems, different local transport management schemes.
- Strong commitment of Emilia-Romagna Region both from economic, political and communication point of views.
- Use of a magnetic strip tickets allowing to better manage all the different fares and transport modes.
- Public transport fare discounts for Mi Muovo owners.
- Involvement of several relevant stakeholders (both public and private) in defining, implementing and managing the initiatives.
- Strong promotional campaigns for the dissemination of the initiative and of the different services and technologies.
- Easy to use technology and simplification of the fare's rules.
- Integration of different existing public transport services in all the regional territory.

Governance scheme adopted

The true innovation of the present pilot lies in the agreement signed by Trenitalia and Start Romagna for launching and managing of the initiative. On our knowledge, such an agreement between the national rail service operator and the one for local public transport was signed for the first time in Italy.

The governance model adopted is based on joint sales of integrated ticket through sales channels of both Start Romagna and Trenitalia. Sale of tickets is constantly monitored through data obtained by ticket validation on buses.
Revenues generated by the sale of tickets will be shared equally between Start Romagna and Trenitalia.

Financial Sustainability

General information on the case study's financial scheme

The present pilot project has an affordable cost since the highest amount is relevant to the total man-hours worked by the different staffs of Start Romagna, Trenitalia and Emilia-Romagna Region for the definition of the final agreement between the parties involved. However, the amount paid will be made back with the profits from the sale of Rail Smart Pass. Revenues generated by the ticket sale will be shared equally between Start Romagna and Trenitalia.
From an economic and financial point of view, the main investment was for the purchase of contactless tickets to give to end users during the first experimentation period. In a second period, additional costs will be related to the purchase of more contactless tickets as well as to the supply of a digital ticket via app. Additional investments will be required for a proper integration of the sale systems. Costs cannot be calculated currently.

Case study's general costs

The first experimental phase of the pilot project will be carried out by selling 7,000 paper and contactless Rail Smart Pass. As in the images below, each ticket shows the logo of Inter-Connect project.

Figure 43: Rail smart pass 3days/7days

The main costs involved in starting the Rail Smart Pass pilot project are shown in the table below.

Table 43: Case study's general costs

Cost	Quantification (€)	Notes
Total investment required in € (approximately)	7.000 €	Cost for the purchase of 7,00 contactless tickets
Advertisement	About 3.000 €	Leaflets, website, large-scale posters and totem shown in the main Start Romagna points of sale.
Foreseen investment duration (years)	Una tantum	

Expected economic resources and their duration

Considering the extremely affordable expense of this pilot project, coverage of costs was easy to be found. It must be underlined the important role played by Inter-Connect project in purchasing part of the tickets used to start the test period.

Table 44: Expected economic resources

Kind of funds	Availability and date of availability (YYYY)	State of the financing	Duration	Brief description
European funds	2019	Funding provided in 2019 for the purchase of contactless tickets	UNA TANTUM/	One-off contribution of Inter-Connect project for the purchase of contactless tickets
National funds	No			
Regional funds	No			
Private funds	No			
Subsidies/Incentives	No			
Internal/own economic resources	Si	Economic investment of stakeholders (Start Romagna and Trenitalia)	Una tantum	
Others	/			

Foreseen revenues streams/internal economic resources

Revenues were calculated considering the sale of all the Rail Smart Pass tickets available (7,000)

Table 45: Foreseen revenues steams/internal economic resources

Revenues streams	€ (Estimation)	Description
Public transport tickets sales	About 250.000€	Compared to the pre-existing Romagna Smart Pass, the sale of integrated tickets is expected to increase thanks to an effective promotional campaign and a greater attractiveness for tourists.
Advertising	No	
Concessions to private operator(s)	No	
External economic collaborations	No	
Others	No	

Details of € 250,000 estimated revenues for 2020 are listed below.

Printed tickets expected to be sold are:

- 3-day Smart Pass Rail: 4,000 tickets
- 7-day Smart Pass Rail: 3,000 tickets

Price of each ticket:

- 3-day Smart Pass Rail: € 25
- 7-day Smart Pass Rail: € 50

Total revenue expected from the sale of tickets during the first experimental phase: € 250,000.

An effective promotional campaign will pay an important role to sell as many tickets as possible.

Case study's financial soundness

Due to the low costs of the project, the financial risk for all the phases was consequently of a low level.

Table 46: Financial risk levels for each phase of the project

Project phases	Financial risk levels	Description
Phase 1. Concept definition	Low	
Phase 2. Pre-feasibility study	Low	Internal resources. The economic resources coming from European projects support the pre-feasibility study.
Phase 3. Feasibility study	Low	Internal resources
Phase 4. Project implementation	Low	Low price operation. No risks for both the investors.
Phase 5. Operation & maintenance	Low	/

Technical Sustainability and intermodality promotion

Enabling technologies

The latest ICT developments offer new opportunities to enable a leap forward in the way collective and individual mobility services are organised and offered. This paragraph intend to analyse the enabling technologies allowing the Inter-Connect case studies development and the way these technologies supports the case studies development.

No technological innovation was required for the pilot project.

Table 47: Enabling technologies for the case study

Enabling technologies	Brief description of the technology and the role (potential role) in the case study
Contacless tickets	Calypso cards are microprocessor based and offer both speed of transaction and high level of security.
Integrated public transport fares systems (STIMER system)	In a logic of a MaaS system development at regional level, the integration of the different public transport fares system was the first fundamental step.
Smart mobility App (MyCicero and Roger)	Roger is the Maas App developed at regional level. MyCicero is an app related to the parking payments. The integrations of these two app was on fundamental step in terms of intermodality promotion at regional level.

From a technological standpoint, the main technological challenge is related to how to deal with the Mi Muovo (Emilia-Romagna transit card) and UNICA card (Trenitalia transit card) that are being fully implemented and adopted in Emilia-Romagna Region. Such transit cards are being implemented so to have a fully integrated ticketing system. These systems are thought mainly for commuters and residents. UNICA is compatible with Mi Muovo and therefore the new "tourist transit pass" should be able to be loaded on the card, or card with pre-loaded tourist transit pass should be sold.
The main technical features of Rail Smart Pass tickets are summarised. Contactless cards are on Calypso CD21 support. Calypso cards are microprocessor based and offer both speed of transaction and high level of security. A supply constraint is applied submitted to the approval of Conduent, a society managing and developing the current Mi Muovo fare system in Emilia-Romagna.
Problems are still present for the electronic validation of tickets. Validation is possible on buses but not on trains, since train tickets are still to be mechanically validated at the station.
As for phase 2, the smart ticket is going to be integrated into ticketing tools on Smartphone such as **Roger** and **MyCicero**. Both these apps allow selling public transport tickets, paying parking and checking regional bus and train timetables just with a single app.

Case studies contributions to intermodality promotion and environmental impacts reduction

This paragraph analyses the key numbers allowing to evaluate the case study contributions (or foreseen contributions) to the promotion of the transport intermodality promotion.

Table 48: Key technical KPs

Indicator	Indicators	Data (real data if available or estimated/expected)
Transport modes integrated	Number and mode (train, bus, ship, ferry, airplane, bikes, etc.)	Buses and trains

MaaS approach	YES/NO	YES
Foreseen users	Number	Additional 7.000 users to regular public transport users
Traffic reduction*	% or Co2 emissions	N.A
Pollution reduction*	% or Co2 emissions	N.A
Timetable integrations	YES/NO	YES
App for final users	YES/NO	To be developed in the next years (second part of 2020)
Others	/	

Other materials and contacts

The main contacts of the main stakeholders working on case study:

- cesare.sgarzi@regione.emilia-romagna.it (Emilia-Romagna Region).
- andrea.normanno@regione.emilia-romagna.it (Emilia-Romagna Region).

3.4 Case Study 3: The Ljubljana metropolitan area case study, Slovenia

3.4.1 Introduction

Regional development agency of Ljubljana urban region (Regionalna razvojna agencija Ljubljanske urbane regije, shortened RRA LUR) participates in the Inter-Connect project as the only Slovenian partner. Main purpose of the RRA LUR involvement within Inter-Connect project is to encourage the overall participation of key stakeholders at all levels (local, national, international) in formulating and implementing a common general strategy for the development of alternatives to the private road passenger transport in Ljubljana urban region area and even wider. Within the Inter-Connect project main bottlenecks on public road and rail transport as well as maritime and air transport is recognised on the pilot corridor Port of Koper-Ljubljana-Ljubljana Jože Pučnik airport.
RRA LUR activities within the Inter-Connect project focuses on the analysis of current situation and the development of inter-modality between different transport systems (bus, railway, maritime and air transport) with the aim of developing sustainable tourism in the area between coastal towns and the Ljubljana Urban Region and beyond. With the aim of identifying the further intermodal development in Slovenia, the main purpose of the pre-feasibility study is to make an analysis of current state of public passenger transport (PPT) and inter-modality in the pilot region and to present the necessary measures that could improve the conditions for use of the PPT especially for tourists between the Slovenian coastal area, the Ljubljana Urban Region and the Ljubljana Jože Pučnik Airport. The Inter-Connect study results are basis for further decisions to be taken within the RRA LUR and represent a valuable input within the Regional development programme (RDP) for next programming period from 2021 to 2027.

3.4.2 Brief case study description

Within the Inter-Connect project RRA LUR formulated the input for the prefeasibility study with the name: Analysis and measures for development of public transport and intermodality on the pilot corridor Airport Jože Pučnik Ljubljana-Ljubljana-Koper. Study was prepared from the external co-operator of the RRA LUR which was PNZ svetovanje projektiranje d.o.o. Study was finalised in in July 2019 and presents the main inputs for the case study performed within the Inter-Connect project and indicates potential measures to improve the conditions of PPT development in Slovenia and wider Adriatic-Ionian macro-region.
The main scope of the study was to analyse the current situation in intermodality and define short- and long-term measures for improvement of touristic PPT within the allocated pilot area. Main topics addressed within the case study for RRA LUR are the following:

- Allocation of pilot area and identification of main stakeholders: basic geographical characterisation of pilot area with general map and main points of interest (e.g. settlement scheme, main transport hubs, main points of touristic attractions), presentation of current and projected commuting transport flows and estimation of modal split among Slovenian regions, review of current and projected tourists flows with modal split and overview of transport operators in the area and relevant stakeholders for realisation of proposed measures;
- Overview of transport infrastructure and services in the pilot: analysis of railway passenger infrastructure (e.g. main transport hubs, points of interchange among PT systems) and services (frequency of service on working and weekend days, transport times among main railway hubs, waiting times and reliability of connections); Analysis of road public transport service among main hubs and description of shuttle services (e.g. GoOpti) and other irregular transport services (e.g FlixBus) among main hubs;
- Provision of passenger information service and customer support: definition of existing information services for passengers (e.g. info-mobility apps, existing pre-trip and on-trip

information systems, timetables on stations, additional information services for tourists) and interconnectivity and language provision of timetable data among different modes of transport on hubs (e.g. languages of timetables, info for busses/shuttles on train stations, availability of onsite and online data for transfers and connections);

- Fares and ticketing systems on the pilot corridor: tariff products for tourists and compared fares for single/return tickets on different PPT options and shuttle services within defined case study area. Within this chapter also presentation on up to date ticketing systems suitable for tourists (e.g. ticketing mediums, types of sale, validation of tickets) for different PPT modes of transport and shuttles was prepared. Overview of current fare and ticketing integration systems among available modes of transport within pilot area was conducted.
- Legal and regulatory aspects of transport in pilot area: overview of main regulatory institutions involved in PPT provision and analysis of regulations taking place for transport operation in case study area (e.g. market access, minimal operating and services requirements);
- List of short- and long-term measures: outline of measures for improvement of touristic PPT in the pilot area for the main areas of intervention:
  - measures for infrastructure and service improvement of connection from maritime areas and Ljubljana Airport to Ljubljana urban region.
  - measures for improvement of info-mobility and passenger information service (on-board, at interchanges) for tourists.
  - measures for improvement on fare integration and integrated ticketing systems among transport operators in pilot area.
  - measures on organisational and regulation aspects to improve public transport operation and interconnectivity study area.

Table 49: Case study development phases' description

Case study phases	Case study phases	Brief description of each phase
Phase 1	***Concept definition***	Within the last decades the case study area became an important tourist attraction point and tourism in Slovenian coastal area is also expected to become one of **the leading industries in the analysed area**. Statistical data on transport flows (RS Statistical office, 2015) indicate that most of foreign tourists come to Slovenia by car (62%) or airplanes (24%). Other means of transport were buses (5%), campervans (4%), trains (2%), motorcycles (1%) and other (2%). In this perception it is of essential importance to Improvements within the intermodal and PPT infrastructure and services to attract more sustainable tourism is thus of essential importance. In the stage of *concept definition*, we **have identified main transport and mobility related issues** within the case study and **illustrate the possible solutions** for improvement of PPT on the national and also regional scale. The main stakeholders for potential uptake of measures were identified and contacted. Main issue at this stage was to **allocate and operate with the data on the tourist and transport flows** to be further extrapolated in order to select and prioritise the PPT and intermodality measures.
Phase 2	***Pre-feasibility study***	When the main problems in the terms of tourism mobility were identified, the next steps were to specify the most suitable **long and short-term measures** that would induce the improvement of the PPT and intermodality in the case study area in Slovenia. Since financial evaluation of proposed measures were hard to allocate, **proposed ideas were ranged** according to the financial frame (less demanding, demanding and very demanding) and also according to the proposed time frame for implementation. Selected measures were categorized also base on the type of intervention. **Groups of measures** were defined on: - measures for infrastructure and service improvement of connection from maritime areas and Ljubljana Airport to Ljubljana urban region. - measures for improvement of info-mobility and passenger information service (on-

		board, at interchanges) for tourists. - measures for improvement on fare integration and integrated ticketing systems among transport operators in pilot area. - measures on organisational and regulation aspects to improve public transport operation and interconnectivity study area.
Phase 3	***Feasibility study***	*Pre-feasibility study present the main measures for potential pilot implementation within the case study area. Preparation of feasibility study depends on further regional and national policy actions.*
Phase 4	***Project implementation***	*Pilot implementation was not in our scope of Inter-Connect action.*
Phase 5	***Operation & maintenance***	*Pilot operation and implementation was not in our scope of Inter-Connect action.*

Based on your case study development plan, more information are provided in relation to the single phases.

Phase 1. Concept definition

Recent macroscopic trends indicate an intense growth of car use on account of more sustainable ways using the public transportation system and non-motorized forms of traffic. The impacts of this trends are especially recognisable in the aspect of unsustainable spatial development of the region and also within the touristic segment. Data from the tourist overnight stays and transport modes used to reach desired locations indicates that leisure and touristic trips would increase approximately the same for all means of transport and we currently cannot expect any positive change in the transport patterns to the more sustainable means.
Figure below indicates that the access times around Koper/Piran, Postojna, Ljubljana and Kranj (located in the case study area) are preferable for the car transport against the public transport. In the maximum 1-hour time one can almost reach central part of Slovenia from any coastal area which is not the case for public transport. If a tourist arriving to the coastal area of Slovenia would use a bus or train public transport, he would need much more time than 1 hour to arrive to the area of Ljubljana urban region. That would also be the case if he would have used integrated public transport systems. Analysis of results indicates that there are further investments needed in improvement of PuT service, travel times and timetables.
The analysis indicated that the main bottleneck and potential for improvement can be found in the further development of Slovenian railways' service and fast long-distance bus transport. Observing connections from coastal area to hinterland, railways do connect coastal areas of Slovenia with Divača, Sežana, Postojna and Ljubljana, but the services (timetables, running times during weekends, ect) should be largely improved.

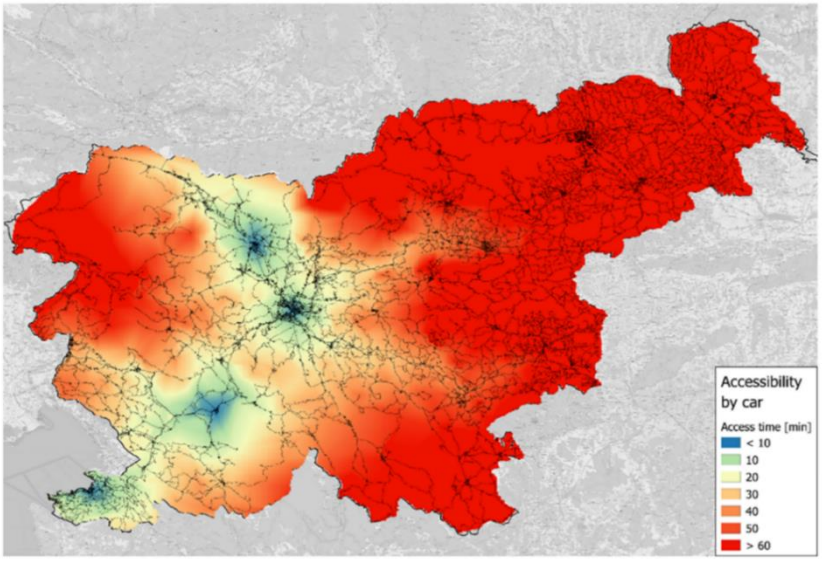


Figure 44: Private transport accessibility from urban centres in project area: Ljubljana, Kranj, Postojna, Koper. (Source: PNZ)

Within the analysis, the demand for a regular direct bus line connecting Ljubljana and the Ljubljana Jože Pučnik Airport was identified. The proposed direct public line would run on the motorway at sufficiently high frequency connecting the main passenger transport hub with Ljubljana city centre and even further. Similar goes for the direct connections from coastal area to Ljubljana urban region which lacks faster and more direct lines, which would include a stop in Postojna as a most important regional urban centre and location of the touristic Postojna cave.
Observing the case study area from the perspective of personal motorised transport, the most important transport hubs, included Ljubljana central station, Cruise terminal in Port of Koper and Ljubljana Jože Pučnik Airport are well connected to urban centres by motorways and a highway, as well as by roads of lower ranks. The main connection between Ljubljana and Koper are the A1 motorway, a part of the E61, and few kilometres of the H5 highway towards Koper, whilst the main connection between Ljubljana and its airport is the A2 motorway, as well a part of the European route E61.
Within the concept definition the general proposals for improvement of the situation in the public transport were proposed, which were then analysed more in details in the last chapter of the study "Chapter 8: List of short- and long-term measures for improvement of touristic PT in pilot area". Also, specific measures for PT improvement were outlined and assessed from the view of financial intensity and the stakeholder's involved.

Phase 2. Pre-feasibility study

The last chapter of the Analysis and measures for development of public transport and intermodality on the pilot corridor Airport Jože Pučnik Ljubljana-Ljubljana-Koper named "List of short- and long-term measures for improvement of touristic PT in pilot area" proposed the selection of the measures to be implemented within the case study area of Slovenia. Groups of measures were presented within the separate tables comprised from various groups of action plans to be implemented:

- measures for infrastructure and service improvement of connection from maritime areas and Ljubljana Airport to Ljubljana urban region;
- measures for improvement of info-mobility and passenger information service (on-board, at interchanges) for tourists;
- measures for improvement on fare integration and integrated ticketing systems among transport operators in pilot area;

- measures on organisational and regulation aspects to improve public transport operation and interconnectivity study area.

Measures were selected on the basis of the results of situation analysis and are not ranked according to the performance indicators. For each measure the **key stakeholders were identified** which hold the final decision on the implementation of the measure. The proposed timeframe of each selected measure was proposed, and financial framework was assessed according to the simple comparison of the measures (less demanding, demanding and very demanding).

Phase 3. Feasibility study

Since no comparison of the impact assessment were performed, we cannot define our study as a feasibility study and can't give any additional information on this topic. There will be no further feasibility study prepared within the Inter-Connect project within the actions of Ljubljana urban region case study.

3.4.3 Stakeholders engagement

Public participation and multilevel governance have always been a priority within the planning and preparation of mobility related measures in RRA LUR. Having previous experiences with devising and implementing various long-term transport measures on the regional level (e.g. regional P+R systems) agency recognised the multilevel planning and long-term governance models also as one of the main objections of Inter-Connect case study preparation which are in depth presented in the following paragraphs.

Main public and private stakeholders involved

Table 50: Stakeholders involved in the case study

Type of stakeholder	Stakeholders and brief description	Role in the case study
Public authority / decision makers	BSC, Business Support Centre, Ltd., RDA of Gorenjska	• BSC, Business Support Centre, Ltd., RDA of Gorenjska is promoting regional development in terms of policies and economic development an offers a link between the regional and national levels of public authorities in the statistical region of Gorenjska.
	Regional Development Centre Koper	• Regional Development Centre Koper advocates the role of regional interests in the field of sustainable mobility and is an important coordinator in the preparation of an integrated regional transport strategy for the South Primorska region.
	RDA Green Karst, Ltd.	• RDA Green Karst, Ltd. is a regional development agency in the Primorsko-Notranjska region in Slovenia, engaged in all areas of regional development, including mobility.
	Ministry of infrastructure	• Ministry of infrastructure of Republic of Slovenia performs professional and administrative tasks in the fields of PT and represents the main stakeholder within the project corridor.
Private operators	ARRIVA SLOVENIA	• Arriva Slovenia is the largest Slovenian liner carrier, providing its companies with regular bus and coach services in the territory of Slovenia.
	Luka Koper, p.l.c.	• Luka Koper, p.l.c. is within the project corridor important actor in providing tourists from cruise segment.
	Fraport Slovenija, Ltd.	• Fraport Slovenija, Ltd. is the manager of the Ljubljana Jože Pučnik Airport and provides the management and operation of the airport and the development of airport infrastructure.

	Ljubljana urban transport (LPP) SŽ-Passenger transport, Ltd. NOMAGO, Ltd.	• LPP's most important task is to provide safe, reliable and smoothly arranged urban, integrated and intercity public passenger transport throughout the City of Ljubljana and sixteen suburban municipalities. • SŽ - Passenger transport, Ltd. is a national railway concession company for domestic and international passenger PT. • NOMAGO, Ltd. is offering a wide range of sustainable mobility related services.
Citizen/Customs	• /	
Others	• /	

Engagement levels

Table 51: Level of engagement of stakeholders

Stakeholder	Level of commitment	Brief description of the commitment level
Stakeholder 1: Anton Melik Geographical Institute of Research Centre of the Slovenian Academy of Sciences and Arts	Inform, Consult	Anton Melik Geographical Institute of Research Centre of the Slovenian Academy of Sciences and Arts was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first and second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 2: ARRIVA SLOVENIA	Inform, Consult, Collaborate, Empower	ARRIVA SLOVENIA was informed about the Inter-Connect project via newsletter and e-mail. They participated at the second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana. ARRIVA SLOVENIA participated as a signatory of the Memorandum of Understanding, also, they were involved in preparation of the MoU and are one of the main decision-makers in region.
Stakeholder 3: BSC, Business Support Centre, Ltd., RDA of Gorenjska	Inform, Collaborate	BSC was informed about the Inter-Connect project via newsletter and e-mail. They participated as a signatory of the Memorandum of Understanding.
Stakeholder 4: CIPRA	Inform	CIPRA was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 5: DRI Investment Management Ltd.	Inform, Consult,	DRI was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first and second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 6: Faculty of Social Sciences	Inform	Faculty of Social Sciences was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 7: FOCUS	Inform, Consult	FOCUS was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 8: Fraport Slovenija	Inform, Consult, Collaborate	Fraport Slovenija was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana. Fraport Slovenija also participated as a signatory of the Memorandum of Understanding.
Stakeholder 9: Institute of Traffic and Transport Ljubljana p.l.c.	Inform, Consult	Institute of Traffic and Transport Ljubljana p.l.c. was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first and second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.

Stakeholder 10: Inter–Municipal Development Centre of the municipalities of Grosuplje, Ivančna Gorica and Trebnje	Inform, Consult	Inter–Municipal Development Centre of the municipalities of Grosuplje, Ivančna Gorica and Trebnje was informed about the Inter-Connect project via newsletter and e-mail. They participated at the second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 11: IPOP	Inform, Consult	IPOP was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 12: Ljubljana urban transport (LPP)	Inform, Consult, Collaborate	LPP was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first and second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana. LPP also participated as a signatory of the Memorandum of Understanding.
Stakeholder 13: Ljubljana Cyclists Network	Inform, Consult	Ljubljana Cyclists Network was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 14: LUZ	Inform, Consult	LUZ was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 15: Luka Koper, p.l.c.	Inform, Collaborate	Luka Koper, p.l.c. was informed about the Inter-Connect project via newsletter and e-mail. They participated as a signatory of the Memorandum of Understanding.
Stakeholder 16: Maribor Cycling Network	Inform	Maribor Cycling Network was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 17: Maribor Development Agency	Inform	Maribor Development Agency was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 18: Ministry of Economic Development and Technology of Republic of Slovenia	Inform	Ministry of Economic Development and Technology of Republic of Slovenia was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 19: Ministry of infrastructure of Republic of Slovenia	Inform, Consult, Collaborate	Ministry of infrastructure of Republic of Slovenia was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first and second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana. Also, they participated as a signatory of the Memorandum of Understanding.
Stakeholder 20: Ministry of the environment and spatial planning of Republic of Slovenia	Inform, Consult	Ministry of the environment and spatial planning of Republic of Slovenia was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 21: Municipality of Borovnica	Inform	Municipality of Borovnica was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 22: Municipality of Brezovica	Inform	Municipality of Brezovica was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 23: Municipality of Dobrepolje	Inform	Municipality of Dobrepolje was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 24: Municipality of	Inform	Municipality of Dobrova-Polhov Gradec was informed about the Inter-Connect project via newsletter and e-mail.

Dobrova-Polhov Gradec		
Stakeholder 25: Municipality of Dol pri Ljubljani	Inform	Municipality of Dol pri Ljubljani was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 26: Municipality of Domžale	Inform	Municipality of Domžale was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 27: Municipality of Grosuplje	Inform	Municipality of Grosuplje was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 28: Municipality of Horjul	Inform	Municipality of Horjul was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 29: Municipality of Ig	Inform	Municipality of Ig was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 30: Municipality of Ivančna Gorica	Inform	Municipality of Ivančna Gorica was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 31: Municipality of Kamnik	Inform	Municipality of Kamnik was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 32: Municipality of Komenda	Inform	Municipality of Komenda was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 33: Municipality of Kungota	Inform, Consult	Municipality of Kungota was informed about the Inter-Connect project via newsletter and e-mail. They participated at the second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 34: Municipality of Litija	Inform	Municipality of Litija was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 35: Municipality of Ljubljana	Inform, Consult	Municipality of Ljubljana was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first and second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 36: Municipality of Logatec	Inform	Municipality of Logatec was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 37: Municipality of Log-Dragomer	Inform	Municipality of Log-Dragomer was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 38: Municipality of Lukovica	Inform	Municipality of Lukovica was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 39: Municipality of Medvode	Inform	Municipality of Medvode was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 40: Municipality of Mengeš	Inform	Municipality of Mengeš was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 41: Municipality of Moravče	Inform	Municipality of Moravče was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 42: Municipality of Pesnica	Inform, Consult	Municipality of Pesnica was informed about the Inter-Connect project via newsletter and e-mail. They participated at the second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 43: Municipality of Škofljica	Inform	Municipality of Škofljica was informed about the Inter-Connect project via newsletter and e-mail.

Stakeholder 44: Municipality of Šmartno pri Litiji	Inform	Municipality of Šmartno pri Litiji was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 45: Municipality of Trzin	Inform	Municipality of Trzin was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 46: Municipality of Velike Lašče	Inform	Municipality of Velike Lašče was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 47: Municipality of Vodice	Inform	Municipality of Vodice was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 48: Municipality of Vrhnika	Inform	Municipality of Vrhnika was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 49: Murska Sobota Development Centre	Inform	Murska Sobota Development Centre was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 50: National institute for Public health	Inform, Consult	National institute for Public health was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 51: NOMAGO, Ltd.	Inform, Consult, Collaborate, Empower	NOMAGO, Ltd. was informed about the Inter-Connect project via newsletter and e-mail. They participated at the second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana. NOMAGO, Ltd. participated as a signatory of the Memorandum of Understanding and they were also involved in preparation of the MoU and are one of the main decision-makers in region.
Stakeholder 52: PNZ, Ltd.	Inform, Consult	PNZ, Ltd. was informed about the Inter-Connect project via newsletter and e-mail. They participated at the second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 53: RASR, Development Agency Savinjska region	Inform	RASR, Development Agency Savinjska region was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 54: Regional development agency Novo mesto, Ltd.	Inform	Regional development agency Novo mesto, Ltd. was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 55: Regional development agency Posavje	Inform	Regional development agency Posavje was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 56: Regional development agency Zasavje	Inform	Regional development agency Zasavje was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 57: Regional Development Centre Koper	Inform, Collaborate	Regional Development Centre Koper was informed about the Inter-Connect project via newsletter and e-mail. They participated as a signatory of the Memorandum of Understanding.
Stakeholder 58: Regional development agency Koroška, Ltd.	Inform	Regional development agency Koroška, Ltd. was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 59: RDA Green Karst, Ltd.	Inform, Collaborate	RDA Green Karst, Ltd. was informed about the Inter-Connect project via newsletter and e-mail. They participated as a signatory of the Memorandum of Understanding.
Stakeholder 60: SID Bank	Inform, Consult	SID Bank was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first stakeholder's consultation and round table

		for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 61: SINERGIJA development Agency	Inform, Consult	SINERGIJA development Agency was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 62: Slovenian infrastructure agency (DRSI)	Inform, Consult	Slovenian infrastructure agency (DRSI) was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 63: Slovenian Cyclists Network	Inform	Slovenian Cyclists Network was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 64: Slovenian Tourist Board	Inform	Slovenian Tourist Board was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 65: Slovenian Tourist Information Centre (STIC)	Inform	Slovenian Tourist Information Centre (STIC) was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 66: Soča Valley Development Centre	Inform	Soča Valley Development Centre was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 67: SŽ-Passenger transport, Ltd.	Inform, Consult, Collaborate	Passenger transport, Ltd. was informed about the Inter-Connect project via newsletter and e-mail. They participated at the first and second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana. Passenger transport, Ltd. participated as a signatory of the Memorandum of Understanding.
Stakeholder 68: TZS	Inform	TZS was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 69: Tourism of Ljubljana	Inform	Tourism of Ljubljana was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 70: UL FGG	Inform, Consult	UL FGG was informed about the Inter-Connect project via newsletter and e-mail. They participated at the second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana.
Stakeholder 71: UNI V MB (FGPA)	Inform	UNI V MB (FGPA) was informed about the Inter-Connect project via newsletter and e-mail.
Stakeholder 72: ZRS Bistra; Ptuj	Inform	ZRS Bistra; Ptuj was informed about the Inter-Connect project via newsletter and e-mail.

Stakeholders influence-interests matrix

After stakeholder's identification phase, the relationships between these actors should be considered. This analysis should be based on a list of different criteria or attributes which are relevant for the respective case, e.g. interest, power, influence on each other, coalitions, etc. This way you can find out what the objectives of each stakeholder are, what their hidden agendas are, and whether they regard themselves as "winners" or "losers" if a given issue is implemented.
The objective of a systematic analysis of actor relationships is to get a clear picture of conflicts of interest or potential coalitions and to be able to better determine clusters of stakeholders who may exhibit different levels of interest, capacities and interest in the issue in question. For example, this can be done by developing an "Influence-Interest Matrix", which groups stakeholders by their level of influence/ importance.

Table 52: Influence-interest matrix

	Low Influence	High influence
Low stake	BSC, Business Support Centre, Ltd., RDA of Gorenjska; Regional Development Centre Koper; RDA Green Karst, Ltd.	Luka Koper, p.l.c.; Fraport Slovenija
High stake	Ljubljana urban transport (LPP); NOMAGO, Ltd. ARRIVA SLOVENIA	Ministry of infrastructure of Republic of Slovenia SŽ-Passenger transport, Ltd.;

On general majority of the bigger stakeholders are gaining with the implementation of the case study measures. Only the stakeholders who are signing the MoU are listed above and assigned among the described attributes.

Engagement Strategies

One aspect to be addressed is the means of engaging stakeholders to improve the efficiency and effectiveness of their involvement and to avoid disputes. There are several specific techniques for achieving stakeholder participation.

Table 53: Engagement strategies

Engagement strategies	Do you use this strategy in your case study? (Yes/No)	Brief description of the engagement strategy used
Invitation Letters	YES	All stakeholders were informed about the Inter-Connect project via projects newsletter(s) and project invitation letters to the Inter-Connect activities.
Questionnaires and Surveys	YES	At the first and second stakeholder's consultation and round table for Slovenian case of Inter-Connect project in Ljubljana, questionnaires were presented to the stakeholders (e.g. road map questionnaires). At the first-round table stakeholders stated their preferences on public transport attributes, at the second round table questionnaires were about port and airport concerning passenger's travel and preferences which defined the list of measures selected for the Inter-Connect road map.
Exhibitions and Road Shows	NO	
Public Meetings	NO	
Use of the full range of the media	YES	Activities that took place during Inter-Connect project were displayed thorough various social media, such as project Facebook, Twitter, Inter-Connect webpage. For the case of RRA LUR the main media was RRA LUR webpage on which all the project activities were presented.
Structured interviews	NO	
Forums	NO	
Focus Groups	YES	During preparation of the MoU focus group was created. Focus group included ten different

		stakeholders that helped preparing, provided feedbacks and will sign the MoU.
Advisory Committee	NO	
Workshop	NO	
Round Table Discussions	YES	During Inter-Connect project there we have organised two round table which were very successful. First round table on 12th of October 2018 included 37 participants and 32 participants were participating in the second round table (11th of December 2019).
Public-private agreement	NO	
Participatory processes	NO	
Memorandum of Understanding (MoU)	YES	MoU has been prepared and is going to be signed by ten stakeholders till the end of March.
Others (please add)_Dissemination events	YES	RRA LUR participated and held two dissemination events for the Inter-Connect project. On the 1st dissemination event (12th of October 2018) there were 37 stakeholders participating and on the 2nd dissemination event (held within European Mobility Week on 18th of September 2019) there were around 80 participants).

3.4.4 Institutional and Political Sustainability

Main national and regional policies supporting the case studies

There are few national policy documents that cover the project corridor on the national context. In addition, the documents are dealing with the whole transport system within Slovenia and also on case study area (Koper-Postojna-Ljubljana-Ljubljana Jože Pučnik Airport). The first national policy document "The Transport Development Strategy in the Republic of Slovenia" (hereinafter: the Strategy, 2015) deals with the transport system as a whole and is based on detailed analyses of infrastructure, functioning of the system and the identified actual problems. Strategy envisages 108 measures, of which some also on the Inter-Connect case study area, which are representing a conceptual strategic basis for the National Programme.
Based on the Strategy, the National Assembly of the Republic of Slovenia adopted, in November 2016, a Resolution on the National Program for the Development of Transport in the Republic of Slovenia until 2030 (ReNPRP30). In order to achieve a defined vision of a transport policy and to ensure sustainable mobility of the population Resolution aims at improving the mobility and accessibility, improving traffic safety, reducing environmental burdens, improving the accessibility of passengers and improving the organizational and operational structure of the transport system. Within the document there are Specific sub-objectives defined (2c: North-Eastern Slovenia, 2f: Primorska region and 2g: Central Slovenia region) which are proposing transport measures that are needed to be performed within the analysed Inter-Connect corridor. Sub-objectives also include tourism sector as a needed part of integrated transport planning and proposes the implementation of the mandatory public utility service of transporting passengers and regional cross-border traffic for the next programming periods.
In addition to above, the Resolution also recognizes the importance to provide a proper airport transport infrastructure and improve connectivity of the Ljubljana Jože Pučnik Airport, which is essential part of transnational connections within the analysed Inter-Connect corridor. In the focus of the measures within the Inter-Connect case study the National programme supports below written measures:

1. Preparation of documentation, which will ensure a greater role of the railways in the PPT (especially the area of Ljubljana with the reorganization of the station and Maribor with the appropriate hinterland).
2. Development of integrated transport strategies, organisation of safe access to stations and stops, P+R system, pavements and bicycle infrastructure, development of strategies for promoting the walking.
3. Elaboration of an analysis of the situation and development possibilities for increasing intermodality, including the emphasis on the increased use of the bicycle network in relation to PPT, the development of a bicycle network, a strategic plan.
4. Establishment of an integrated ticket (introduction of a system and the establishment of JPP Manager), modernization of public passenger transport services and provision of traffic information platform,
5. Harmonization of the timetables between the different modes of transport (rail, public line long distance and city transport of passengers).

The sets of measures defined within the National programme are in line also with measures defined within the document "Analysis and measures for development of public transport and intermodality on the pilot corridor Airport Jože Pučnik Ljubljana-Ljubljana-Koper" which is the main document for further elaboration and improvement of cross-border transport and passengers intermodality within the case study area of Ljubljana urban region.

The main regional policy support to the case study on a regional level is the Sustainable urban mobility plan of Ljubljana urban region (SUMP LUR) of which main goal is to is improve the accessibility of urban and regional areas with providing resilient low-carbon transportation and mobility in Ljubljana urban region which is a part of Inter-Connect case study. Based on the common vision, SUMP LUR activities are focused on finding various short- and long-term solutions to provide accessible, fast, efficient, safe, environmentally and economically acceptable transport in Ljubljana urban region for daily commute and also touristic purposes.
Sources for national and regional policies supporting the case studies are:

- The Transport Development Strategy in the Republic of Slovenia,
- National Program for the Development of Transport in the Republic of Slovenia until 2030
- Sustainable urban mobility plan of Ljubljana urban region.

Governance scheme adopted

Main focus in RRA LUR case study was given to the preparation of study and cooperation of main stakeholders within the selected Airport Jože Pučnik Ljubljana-Ljubljana-Koper corridor. Main governance schemes that are adopting our case study are the following:

- various stakeholders and general public that were involved in SUMP LUR and case study analysis throughout Inter-Connect project cycle.
- higher political involvement was achieved by active participation of various national organisations that also participated within the discussions and will support the further project actions in the field of PT and intermodally development. The participating ministries were Ministry of Economic Development and Technology, Ministry of the Environment and Spatial Planning and Ministry of Infrastructure.
- Case study actions that were focusing on measures within regional scale have a potential to achieve an up take from a LUR regional bodies such as regional development council, regional council and Regional Coordination Committee for public transport.
- Discussions within Inter-Connect round tables and communication events also brought on board main transport operators in the region. Case study is thus supported from regional bus

operators (Ljubljana urban transport, NOMAGO, Arriva and Slovenian Railway Passenger transport).

The main policy uptake from the Inter-Connect case study in Ljubljana urban region was a signature of the local "Memorandum of Understanding (MoU)" which was signed in order to identify regional interdependencies and common understanding of the main stakeholders in the case study area to further support the development of trans-national, regional and also local PT and intermodality of various transport modes. The main purpose of MoU in Ljubljana case was to further support the development of seamless and efficient PT operation, complementary services and intermodality in the Inter-Connect case study, especially trough:

1. Assuring effort for PT service improvements and reliability of PT.
2. Supporting the measures for improvement of info-mobility and passenger information service.
3. Implementation of measures within the field of tariff and integrated ticketing systems among complementary transport and touristic services and transport operators.
4. Promotion on public transport, intermodality and other complementary services for sustainable mobility – "Mobility as a service".
5. Support on further analysis and proposals of implementational measures for improvement of PPT connectivity within the analysed corridor.

The agreements reached among the 11 stakeholders in Slovenia will increase the potential for improvement in the PT provision and intermodality improvement in the case study area. Signed MoU within Ljubljana urban region case study will promote the communication among the included parties in PT provision within the case study area and thus support the PT improvement in ADRION area on the long run.

3.4.5 Financial Sustainability

General information on the case study's financial scheme

Within the case study from Ljubljana urban region the main focus was in establishing a structure that could provide seamless PT transport among main points of interest from coastal areas of Slovenia to hinterland (Postojna, Ljubljana and Airport Jože Pučnik Ljubljana). Based on the analysis of the situation and the data collected in the project corridor, the following measures were selected to further develop PTT and intermodality within the case study corridor:

1. Establishment of a direct bus connection (circular line) within urban PPT in city of Koper, connecting passenger terminal of the Port of Koper and the main railway station of Koper;
2. Improving connections and accessibility with the PPT to major tourist attractions along the project corridor with the main attraction as Postojna cave.
3. Improvement of the frequency, intervals and travel speeds of PPT between Koper and Ljubljana, with intermediate stops in major regional towns and tourist centres
4. Ensuring the quality PPT to Ljubljana Jože Pučnik Airport with frequent PPT connections from main terminal of Ljubljana and connections to Kranj.

The calculation of general costs includes described potential pilot actions according to the Case study analysis and MoU signature.

Case study's general costs

For calculation of potential general costs of actions for PT and intermodality improvement foreseen within the case study analysis the general costs for seamless intermodality in Slovenian corridor should include:

- Koper ferry terminal-Koper train station connection: direct circular route in the length of 7,2 km, 60 rides on average working and 30 daily rides on average non-working day;

- Additional bus connections from Koper station to Ljubljana station: length of 234 km (round journey of 234 km with the stop in Postojna bus station), 5 pairs of connections on working day and 3 pairs of connections on non-working day. Also train connections are possible with regular intermediate stops.
- Timetable shuttle connection among Postojna train station-Postojna bus station and Postojna cave at the time of touristic peak arrivals: length of 5,6 km in round journey, 5 connections on working days and 10 pairs of connections on non-working days (increase of demand for Postojna cave visits on weekends)
- Regular bus connection from Ljubljana train/bus terminal to Ljubljana Jože Pučnik Airport and Kranj connection: round trip connection of 86 km, additional 7 pairs of connections on working and weekdays.

Based on the average operation costs for Slovenia which are around 1,7 EUR per v/km in public transport (excluding VAT) the estimations of yearly costs for all the stated implementations were calculated

Table 54: Case study's general costs

Cost	Quantification (€)	Notes
Total investment required in € (approximately)	1.215.000,00 € /yearly without VAT	Investments only include operational costs and do not include potential purchase of vehicles for services.
Foreseen investment duration (years)	4 years	Implementation of intermodal connections could be performed in various stages. Each year, one additional service could added.

Expected economic resources and their duration

This paragraph intends to map the economic resources supporting the definition and/or the implementation of the Inter-Connect case studies.

Table 55: Expected economic resources

Kind of funds	Availability and date of availability (YYYY)	State of the financing	Duration	Brief description
European funds	NO			
National funds	YES	Potential source, only discussed	nn	In case of inclusion of proposed actions within the concession contracts (re-negotiation year 2021)
Regional funds	NO		nn	
Private funds	YES	Potential source, only discussed	nn	Main touristic attractions and agencies could perceive the PT improvement as potential for further development
Subsidies/Incentives	YES	Potential source within the renewed concession contract	nn	In case of inclusion of proposed actions within the concession contracts (re-negotiation year 2021)
Internal/own economic resources	NO		nn	
Others: Municipalities involved	YES	Potential source, only optional	nn	Municipalities that see the potential in implementation (Koper, Postojna,

				Ljubljana, Kranj) could additionally subsidise the PT improvement).

All of funds should be received from external sources and revenue streams from users.

Foreseen revenues streams/internal economic resources

In order to evaluate the financial soundness of the Inter-Connect case studies, it is important to monitor not only the costs but also the foreseen/possible revenues streams coming from a future implementation of the case studies' actions.

Table 56: Foreseen revenue streams/internal economic resources

Revenues streams	€ (Estimation) – YEARLY, rough estimations	Description
Public transport tickets sales	486.000,00 € (20 %), estimate	Implementation of intermodal connection would (potentially) increase the ticket sale on the corridor for 20 % - estimation
Advertising	182.250,00 € (15 %), estimate	Advertising on busses, shuttles and other items where advertisement space is available.
Concessions to private operator(s)	364.500,00 € (40 %), estimate	Sources from concessions in the case services are included in the subsidised scheme from PSO.
External economic collaborations	121.500,00 € (15 %), estimate	Main touristic attractions (Postojna cave as a private company) and travel agencies (NOMAGO) could give their share
Others	60.750,00 € (10 %), estimate	Involved municipalities (Koper, Postojna, Ljubljana, Kranj) could support the action – PT improvement would increase the number of tourists and increase the revenues from tourist tax & overnight stays.

Case study's financial soundness

This paragraph intends to synthetize all the quantitative and qualitative data collected in the previous paragraphs in order to evaluate the case studies financial soundness and risks levels.

Table 57: Financial risk levels for each phase of the project

Project phases	Financial risk levels	Description
Phase 1. Concept definition	Low	Resources from European projects or national funds can suffice to prepare concept definition for case study in RRA LUR case.
Phase 2. Pre-feasibility study	Low	Pre-feasibility study can be prepared from European projects for measures in specific modes of transport on parts of case study corridor.
Phase 3. Feasibility study	Medium	Feasibility study including specific sets of measures to be implemented within the case study corridor could be covered from national sources in case the case study corridor would have an uptake on a national level.

Phase 4. Project implementation	High	Currently, financial resources for project implementations on case study corridor are not allocated. Partial case studies (test operation for 1-2 year periods) could be financed from European or national sources.
Phase 5. Operation & maintenance	High	Implemented measures would need sufficient financial resources to operate on a longer run when pilot projects are finished. In case of pilot project's success, the national resources could become available on a longer run.

3.4.6 Technical Sustainability and intermodality promotion

This paragraph intends to analysis the key technical and technological aspects of the Inter-Connect case studies in order to understand the enabling technologies supporting the planning and/or the implementation and the management of the Inter-Connect case studies. A specific focus is dedicated to evaluating the practical solution supporting the intermodality promotion.

Enabling technologies

The latest ICT developments offer new opportunities to enable a leap forward in the way collective and individual mobility services are organised and offered. This paragraph intends to analyse the enabling technologies allowing the Inter-Connect case studies development and the way these technologies supports the case studies development.

Table 58: Enabling technologies for the case study

Enabling technologies	Brief description of the technology and the role (potential role) in the case study
Introduction of a single integrated ticket for all modes of transport in pilot area.	Within the Slovenia area the single integrated ticketing system is currently in "TRL 8" level. ITTS is in the implementation phase and is available for costumers. On the case study area, the systems are available for wider implementation. The single integration ticketing system would allow all services on the Case study area to be integrated with ITTS. The cross-border ITTS systems are very rare and only existent on some ITA-SLO PT connections (e.g. Connect2CE project pilot).
Introduction of various payment methods for all mode of public transport: e-tickets, paying with credit cards or smart phones.	Multiple options of payment methods are available in case study area. The readiness level is TRL 7: demonstration level. Some systems still do not offer payment with smart phones or on-line purchase of tickets. On the case study area, the technology for various payment methods would improve the acceptance of established intermodal connections.
Introduction of multilingual public transport service passenger information on all info points, web pages and mobile apps.	The technology is in TRL 4 "Small scale prototype", since on some stations there are pilot actions implemented. On general the information is available in Slovene and potentially in English language. The implementation on the whole case study area would improve PT acceptance for all sorts of touristic users. Within the Koper Municipality services and information should also be available in Italian language.
Introduction of various touristic packages, that includes tickets for all modes of public transport in pilot area and tickets for tourist attractions.	Within the case study area, the touristic packages including PT offers are in TRL 2. Only in Ljubljana there is a Ljubljana touristic card that is offering also free of charge PT usage. Implication of various touristic packages within the whole case study area would improve the usage of PT among the tourists.

Case studies contributions to intermodality promotion and environemtnal impacts reduction

This paragraph analyses the key numbers allowing to evaluate the case study contributions (or foreseen contributions) to the promotion of the transport intermodality promotion.

Table 59: Key technical KPs

Indicator	Indicators	Data (real data if available or estimated/expected)
Transport modes integrated	Number and mode (train, bus, ship, ferry, airplane, bikes, etc.)	4 (ferry/cruise, rail, bus, airplane)
MaaS approach	YES/NO	YES
Foreseen users	Number	200-400 users month (any segment within the case study and dependable on time of year)
Traffic reduction*	% or Co2 emissions	Reduction of 0,5 % traffic with personal vehicles (* observation from current status o PT usage)
Pollution reduction*	% or Co2 emissions	Reduction of 0,3 % emissions from personal vehicles
Timetable integrations	YES/NO	YES
App for final users	YES/NO	NO
Multilanguage systems for users	YES/NO	YES

3.4.7 Other materials and contacts

The main synergies with other projects and case studies are:

- The implementation is related to the Connect2CE project (Interreg Central Europe programme) which also implements pilot cross-border ticketing systems across Italy and Slovenian borders. https://www.interreg-central.eu/Content.Node/CONNECT2CE.html.
- Project implications are also similar to the CROSSMOBY project: "Mobility planning and sustainable, cross-border and passenger transport services, in the pursuit of intermodality". CROSSMOBY is co-financed from Interreg ITA-SLO programme. https://www.ita-slo.eu/en/crossmoby

3.5 Case Study 4: The Friuli-Venezia-Giulia Region case study, Italy

3.5.1 Case study description

Phase 1. Concept definition

The influence of the historical background and geographical positioning on the character of the city of Trieste

The interrelations between the Trieste hub, its regional context and the cross-border dimension are characterised by peculiar conditions. In this purpose, it is to underline that, in spite of being the capital city of Friuli-Venezia-Giulia, Trieste is a "border city" located towards the end of a narrow strip of Italian territory (lying between the Adriatic Sea and Slovenia), in correspondence of the south-eastern corner of the region. These somehow contradictory conditions are also emphasised when considering the historical background. In this purpose, it to recall the vicissitudes of the last century that led Trieste, a city characterised by a strong international character, from being a key maritime gateway of a transnational empire – the former Augsburg Empire - to a regional centre with a limited hinterland, in such a peculiar bordering condition as the former "Iron Curtain" and, eventually, to the renewed perspective related to its positioning in a key area for European unification process, bridging between Western and Eastern countries.

The geomorphological context and the role of Trieste in the transport network

Furthermore, in order to provide a complete picture, geomorphological conditions should be taken into account as well. In this purpose, it is to recall orographic conditions related to its location between the Karst plateau steeply descending towards the Adriatic Sea, thus providing challenging conditions for urban and infrastructure development. In a wider perspective, it is to emphasise the presence of a port endowed with a natural deep-sea floor and located in correspondence of the northernmost reach of both the Adriatic and the Mediterranean Sea.

Obviously, over the years, all these aspects, bringing about relevant challenges as well as opportunities, have contributed to shaping the Trieste transport network. Among other things, it is to highlight the role of maritime transport as well as the fact that the main rail station (Trieste Centrale) is a terminus station of the Italian railway network.

Hence, still from the brief observations reported so far, it is possible to ascertain how, in the case of Trieste, attaining the full role of transport hub implies, almost inevitably, dealing with the cross-border dimension in a context with a high transnational vocation and where maritime transport plays a key role.

Tourist attractiveness of Trieste and neighbouring areas

Another key driver, to be duly taken into account in promoting sustainable and intermodal transport, is represented by tourism, to which are related relevant traffic flows. In this purpose, together with relevant components merely crossing the regional context (especially through the A4 motorway, along the route connecting Northern Italy with Slovenia and Croatia), it is to underline those directly connected to relevant touristic areas represented by Trieste as well as by other destinations within Friuli-Venezia-Giulia region.

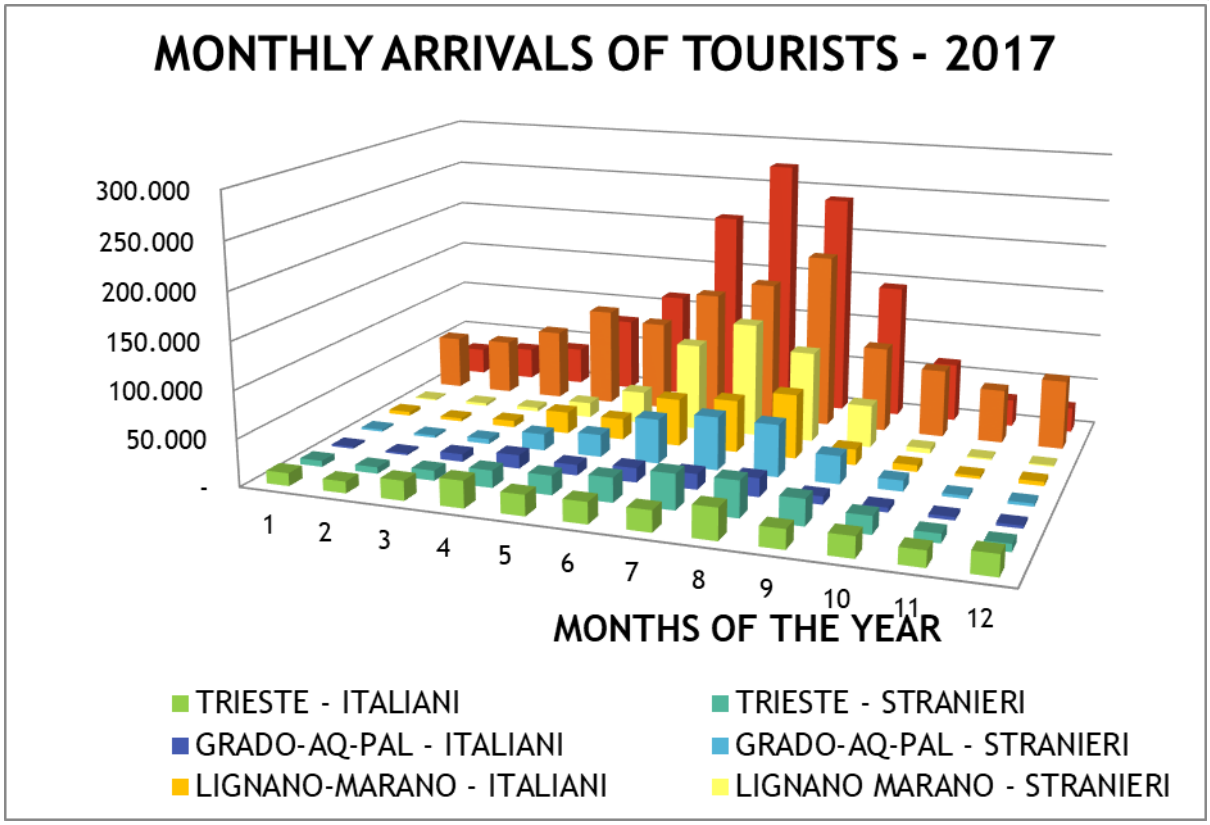


Figure 45: Tourism destinations in FVG region: number of monthly arrivals in different area

In fact, the Trieste area is characterised by the attractiveness of a city centre with many historical landmarks as well as by the natural context of the coastal areas and the Karsts hills. The related flows are characterised by a growing pattern registered in the recent years. Moreover, concerning the distribution of arrivals through the different months, it is characterised and by a relatively even distribution throughout the different months of year (especially with reference to Italian visitors).
Moreover, extending the analysis to neighbouring context within the regional context the following two areas can be mentioned:

- Grado, Aquileia and Palmanova area – a remarkable destination for beach tourism (Grado) together with two historical centres (Aquileia and Palmanova) recognized as UNESCO heritage sites.
- Lignano and Marano – the Lignano beach tourism area characterised by the higher number of tourists along with the natural context of the Marano Lagoon.

When comparing the monthly arrivals (see Figure 1), it must be noted how these last two areas are characterised by higher volumes than those associated to the Trieste area. Obviously, these high values are particularly concentrated in the summer.

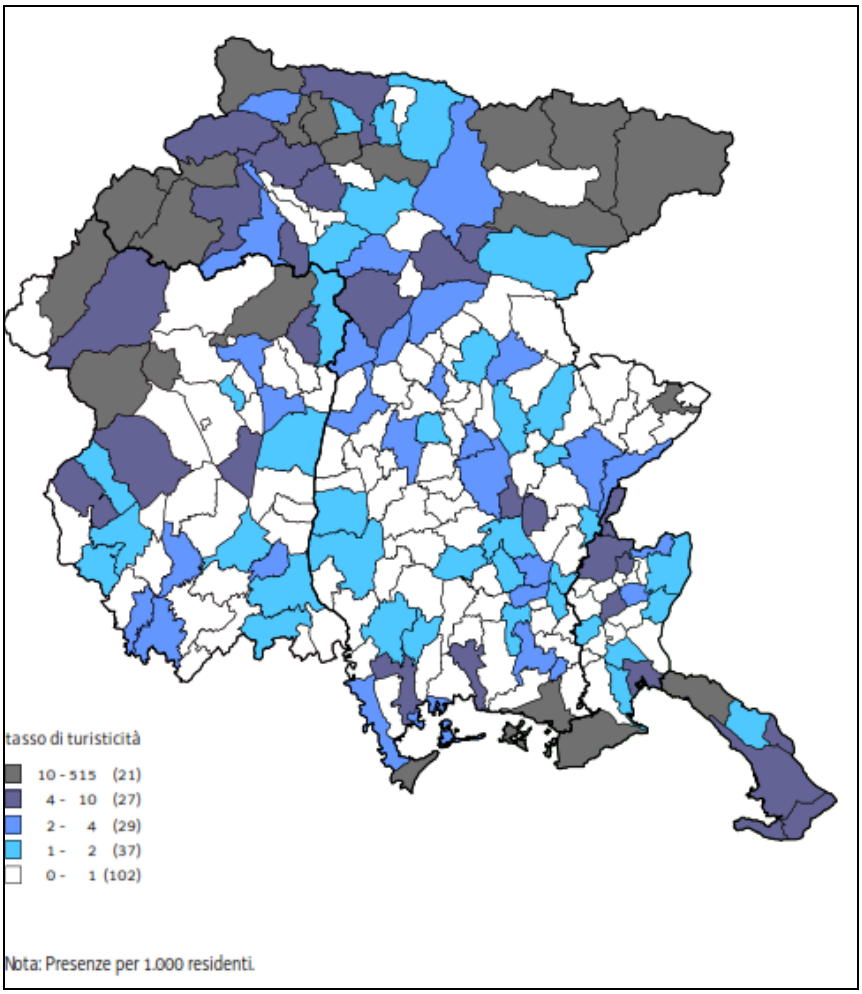


Figure 46: Tourism destinations in FVG region: number of tourists per 1000 residents in each municipality

Furthermore, further widening the perspective as to include also neighbouring areas beyond the regional borders, it is to report the presence of remarkably strong areas along the Adriatic coast both on the western side (Veneto Region) and on the south-eastern one (Slovenia and Croatia).

Rail Transport

The transport demand arising from residents and tourist is by a transport supply that has in the rail network a key backbone supporting sustainable intermodal transport.

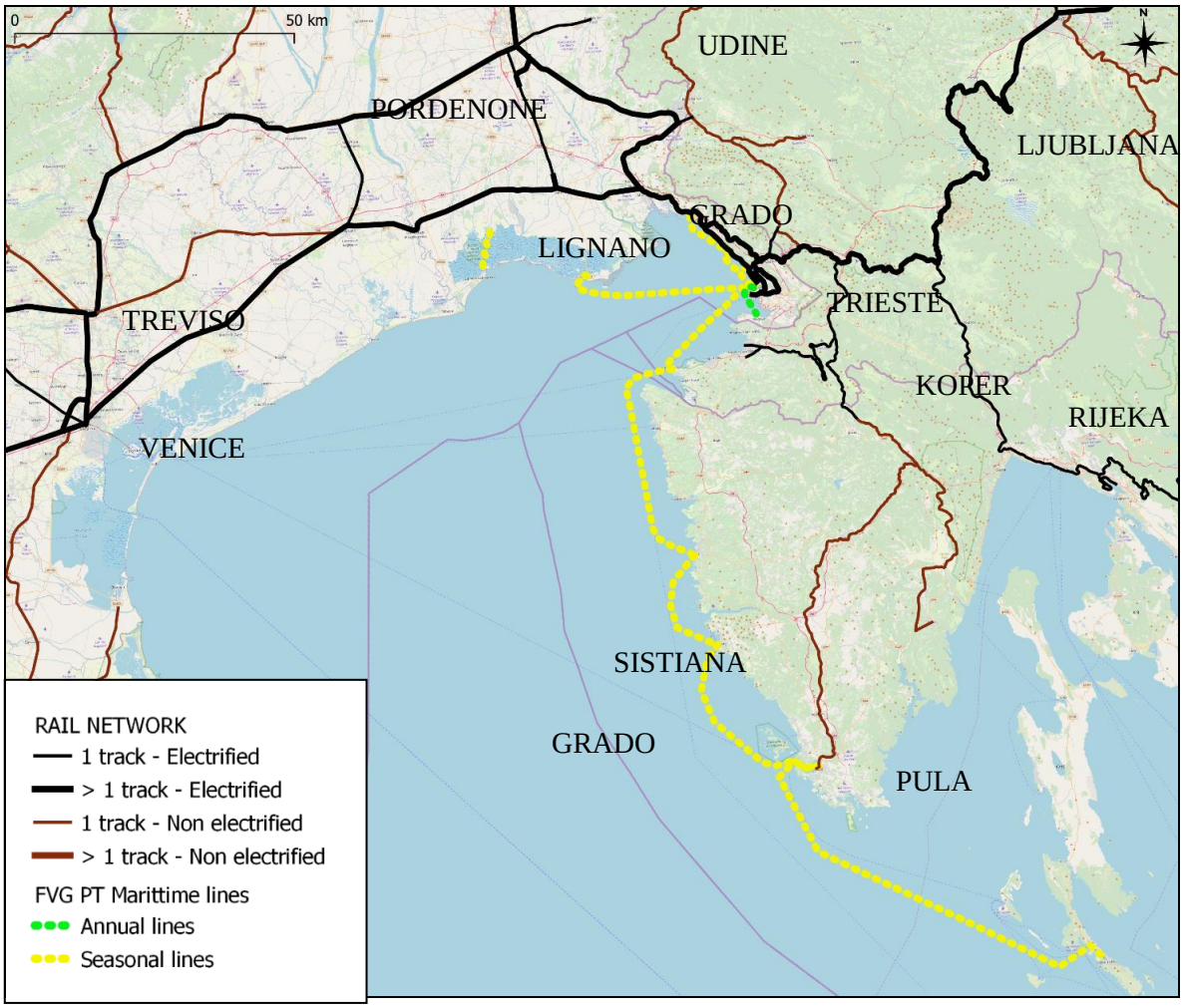


Figure 47: Rail Network and maritime PT connection in the Trieste area

The rail network of FVG and neighbouring areas is represented in the Figures 3 and 4 according to a thematic representing depicting key aspects as the provision of electricity supply and the number of tracks.

Among other things, this representation allows to outline the absence of remarkable railway lines linking the main centres along the coastline. In this purpose, the only limited and partial extension is given to the limited stretch heading towards Trieste Centrale station, represented by a circle in orange colour in Figure 48.

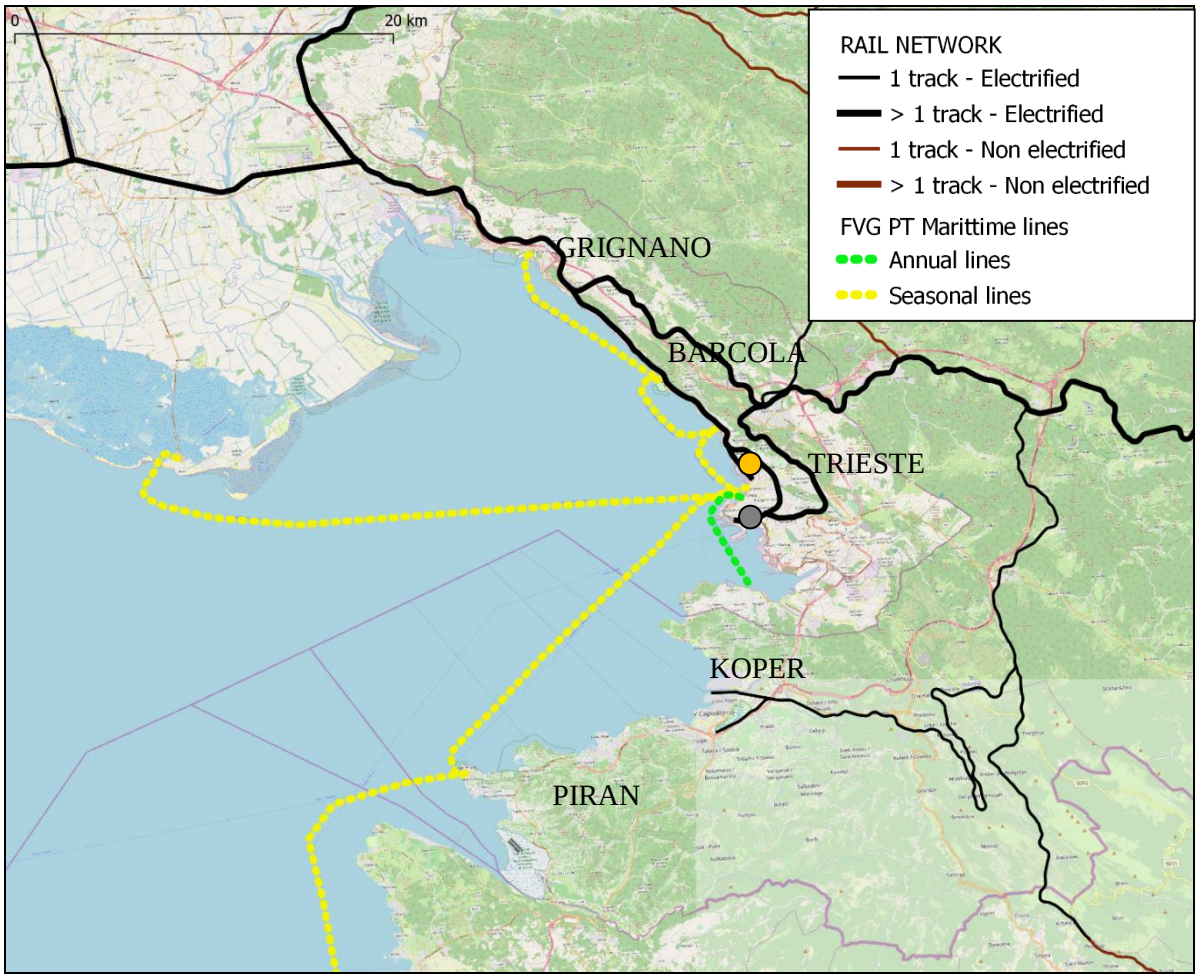


Figure 48: Rail Network and maritime PT connection in the Trieste area – zoomed view

Extending the analysis to the neighbouring areas, it must be observed that Koper, is reached by a single-track line congested by freight traffic, which hampers the development of passenger services. In the Croatian context, within the Istrian peninsula only the city of Pula is reached by a single track non electrified line[3].
Hence, the role of waterborne transport (see dotted lines in yellow and green colour in the previous figures) in supporting intermodal connectivity between the relevant touristic centres along the coast is evident.

Cycling routes

Given the attention paid to sustainable tourism, an important aspect of (local/cross-border and trasnational) connectivity is related to cycle-tourism. In this purpose, it is to underline a positive trend also testified by different initiatives (including various ongoing and past Interreg projects).
Concerning the network of long-distance routes, it is to highlight the presence along the coastal area of the EUROVELO 8, (see Figure 5) which continues along the Adriatic-Ionian coast up to Greece.
Focusing on FVG, this long-distance route is interconnected with a denser network of regional-level itineraries (see Figure 6).

[3] The Eastern branch of the Istrian railway, reaching the port of Bršica is currently closed.

Figure 49: Trieste (red circle) in the European network of long-distance cycling routes (EuroVelo)

In order to emphasise remarkable opportunities related to an intermodal approach Figure7 is showing the main interchanges between maritime services (blue) and cycling routes (red) in the regional context.

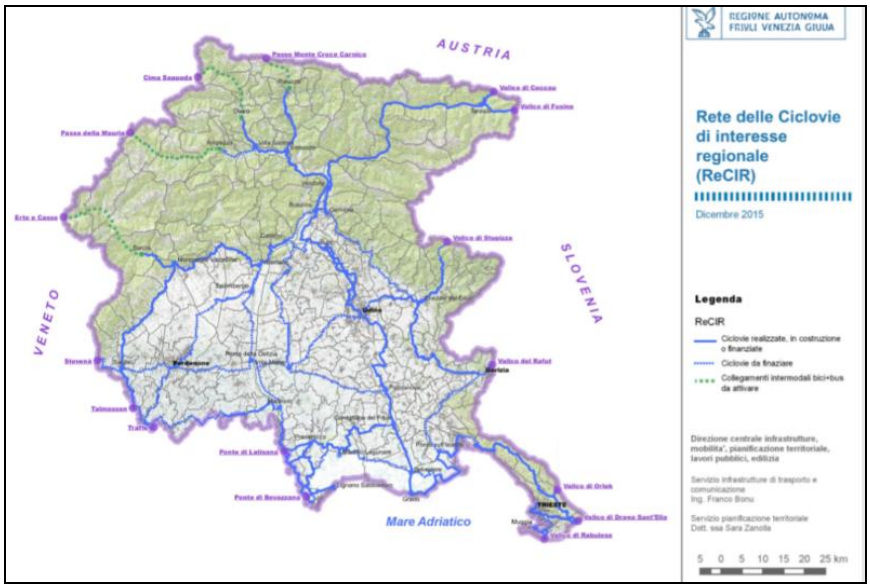


Figure 50: The regional-level network of cycling routes. Source FVG Region

Figure 51: Main interchanges between maritime services (blue) and cycling routes (red). Source FVG Region

Going more into detail with reference to regional (passenger) waterborne transport in Friuli Venezia Giulia region, the services reported in the following tables (and shown in the previous figures) are operating as full-fledged local public transport services.

Table 60:Maritime Local Public Transport services in FVG region.

Connection	Period	Pt operator
Trieste - Muggia	Annual	Trieste Trasporti S.p.A.
Trieste - Barcola Grignano- Sistiana	Seasonal	Trieste Trasporti S.p.A.
Trieste - Grado	Seasonal	APT S.p.A.
Marano - Lignano	Seasonal	SAF S.p.A.

In addition, given the depicted situation, it is to emphasise the role of the seasonal maritime connection between Trieste and Istria, given its tourist value as well as its role in strengthening cross-border connectivity between Italy, Slovenia and Croatia.

Furthermore, as far as passenger waterborne transport is concerned, in order to complete the picture of all connections from/to Trieste also ferry linking to other (more distant) destinations and cruise traffic are to be mentioned.
With reference to ferry, currently only the connection Trieste – Durrës is to be reported.
Concerning cruise traffic, in spite of some reductions registered in 2018, Trieste port is showing a positive outlook for 2019 given a total number of 63 calls scheduled.

The Trieste case study developed in Inter-Connect

More in general, in the framework described in the previous pages, intermodal transport pivoting on maritime connection is deemed of strategic relevance with reference to the enhancement of cross-border connectivity. In this purpose, the Regional Plan for Local Public Transport issued in 2013 was already highlighting the two connections shown in Figure 8.

Figure 52: The Inter-Connect sub-cases A (blue) and B (blue) as envisaged in the FVG regional PT plan

These two connections envisaged by the Regional Plan are addressed specifically by the FVG case study developed by CEI within Inter-Connect.
CEI case study is being developed in cooperation with Friuli-Venezia-Giulia Autonomous Region as well as different actors involved in the development of sustainable passenger transport and tourism in the Trieste context.
As far as main priorities are concerned, it is to underline how the case study is targeting specific interventions not encompassing costly infrastructural realisations that through closing existing gaps are likely to leverage relevant improvements with limited efforts (and budget). Therefore, they can be broadly referred as soft interventions. More specifically the identified measures will imply the

subsequent development of ICT solutions efficiently providing information to users as well as the upgrade of facilities, also implying minor infrastructural improvements for enhancing the terminal accessibility.
Moreover, the key object of the case study is chiefly and directly addressing integrated services provision with reference to multimodal solutions pivoting on the transnational waterborne services in Trieste.
Last but not least, it is to emphasise how the overall development of the case study, strongly based on the stakeholder's involvement is inherently addressing the governance issues at transnational level.
In this purpose, it is also to underline how the case studies are framed in a strategic approach pursued by FVG Autonomous Region for enhancing cross-border connectivity in general, thus promoting multimodal services linking to Austria, Slovenia and Croatia.
Within this framework, the goal of the FVG case study within Inter-Connect is to support further improvements of intermodal connections and accessibility pivoting on the existing maritime services connections in Trieste. Following the preliminary analysis carried out as well as the feedbacks received from relevant stakeholders, it has been possible to devise a two-folded case study for the Trieste area that is also complying with the strategic vision represented by Figure 8:

- **SUB CASE A** (see blue line in Figure 52) – focusing on the existing cross-border maritime service and aiming to enhance its accessibility and (landside) interconnection with public transport services as well as its usability;
- **SUB CASE B** (see red line in Figure 52) – addressing the assessment of the potential and development of a new maritime service linking (Trieste-Muggia-Koper).

Given the specific character of each sub-case, apart from undoubtedly relevant synergies (related to the presence of common issue and approaches), they are described separately in the following pages.

SUB CASE A

According to the strategic framework previously described, the sub-case A is focusing on intermodal connectivity and land-side accessibility related to the already existing seasonal services linking Trieste with relevant destination in Slovenian as well as Croatian coast. Hence, the sub-case A focuses on the improvement of conditions for facilitating interchanges (e.g. through user-friendly information provision and addressing the maritime terminal accessibility) between urban public transport services and the maritime passenger's terminal, especially for tourists departing from Trieste to the Slovenian and Croatian costal area; furthermore it is also taking into account the potential of passengers coming to visit Trieste (thus allowing an improved accessibility to the main touristic places).

Mapping the addressed issues and background analysis

The transnational maritime service
In addition to the general background already provided, for the specific purposes of sub-case A, it is to recall the participation of FVG region as Lead Partner in the EA SEA-WAY project, co-funded by the CBC IPA-Adriatic Programme, through which it implemented new maritime services between Trieste, Piran (Slovenia), Rovinj (Croatia) and Pula (Croatia). Indeed, after the experimental phase implemented within the IPA Adriatic Project, thanks to the positive feedbacks received in terms of passenger's flows, the Region FVG has decided to finance this service with regional funds, thus guaranteeing a stable (seasonal) service line.
Moreover, thanks to an Italy-Croatia CBC Project (MOSES, RFVG as Lead Partner), this maritime line has been experimentally extended to Lošinj Island. Consequently, the existing seasonal maritime service/route (which is adding to the previous ones, also the stop point in Poreč) in 2018 (start of the actual sub-case implementation) is described in Figure 9.

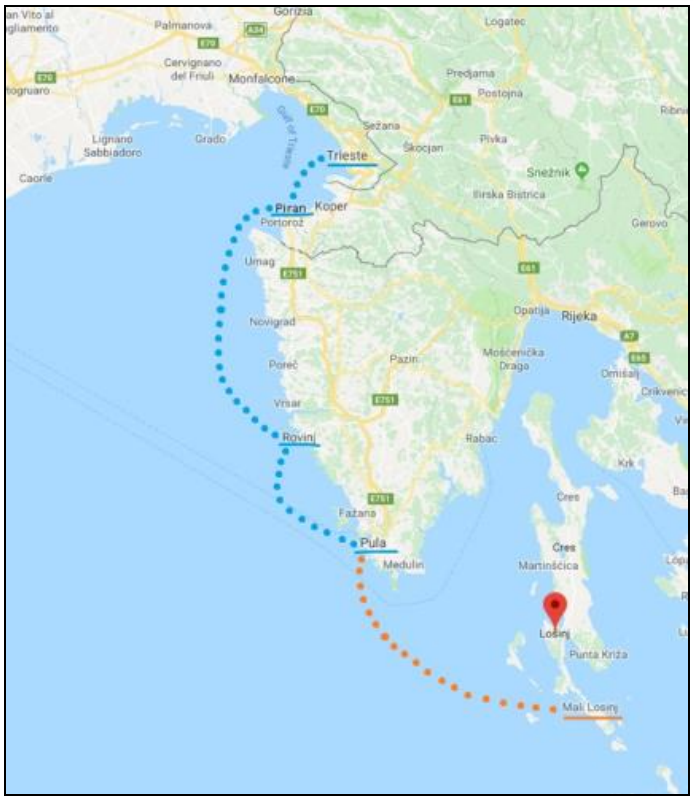


Figure 53:Maritime transnational seasonal lines financed by RFVG in 2018, including the experimental extension (red) within MOSES Project

The available statistics about the usage of service, reaching an average number of about more than 10.000 passengers per year (i.e. during the specific months when the service is operated, from June to the beginning of September), confirm the relevance and appeal of the service.

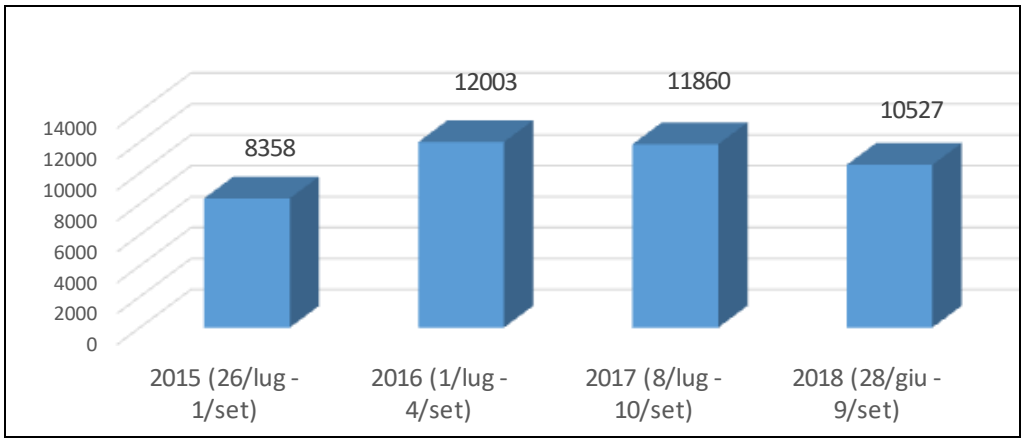


Figure 54:Passengers per year of the existing transnational maritime service

The maritime station in Trieste

For passengers arriving in Trieste, it is to recall that the Passengers terminal (i.e. the new maritime station placed on Pier IV – "Molo 4") is located in the centre of Trieste, close to the railway station (450 m by feet) and already served by the bus service (a urban bus stop is available outside the passenger terminal). Furthermore, the terminal is strategically located, close to the heart of the city centre as well as to the key landmarks of the Trieste.

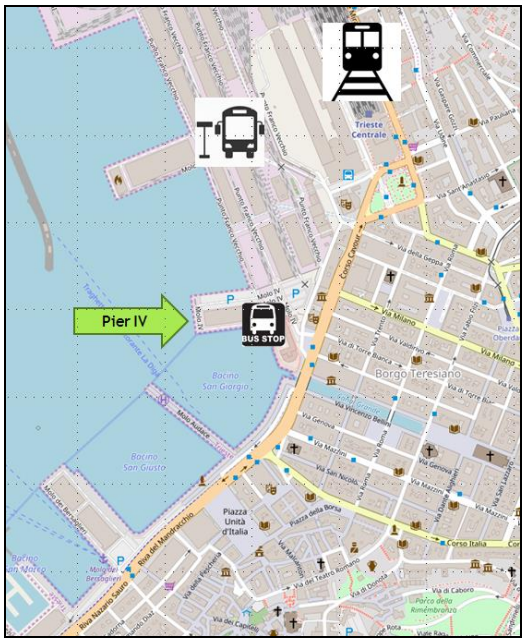


Figure 55:Passenger terminal Trieste

In fact, "Trieste Terminal passeggeri" is located closed to the so called "Porto vecchio", the old and decommissioned port of Trieste. Part of this area is used as a car park (namely "Molo IV park").
The Passenger terminal for maritime lines is located inside this car park area (Figure 12). The parking area at Molo IV has 600 spaces and is open 24/7. The parking lot is fenced in and equipped with surveillance cameras. Post payment can be made with cash, debit and credit cards at the automatic cash register.

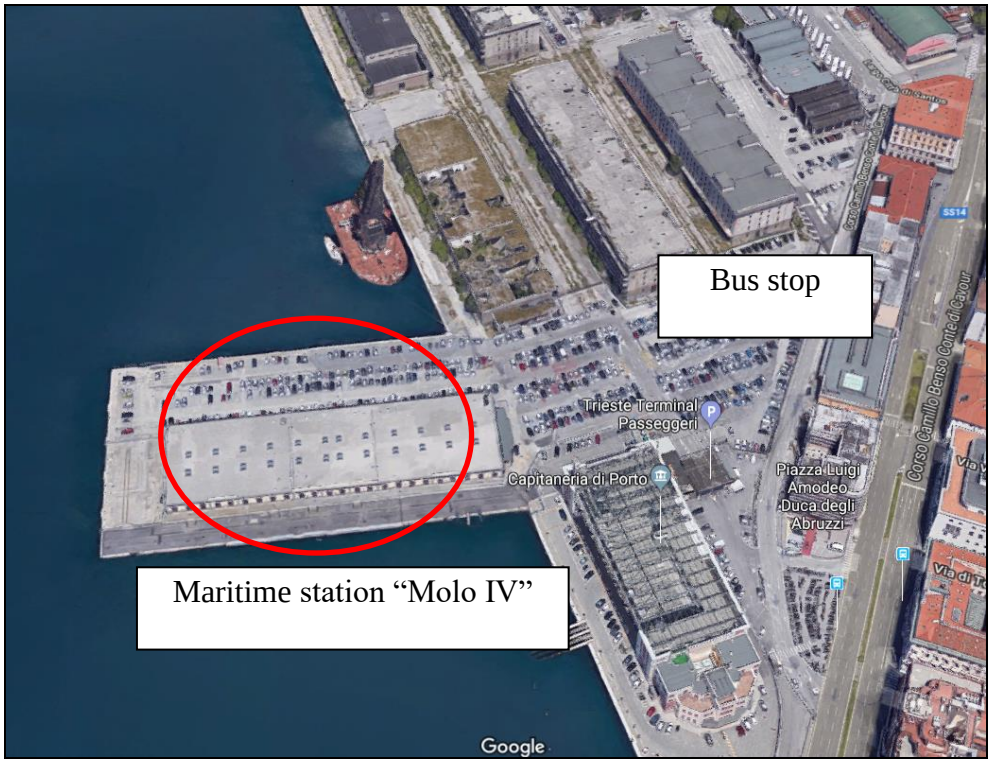


Figure 56:3D view of the Passengers' terminal

Identifying the main needs

Feedbacks from stakeholders

In order to identify the key needs and possible options for relevant improvement, the involvement and dialogue with stakeholders allowed to underline 3 main categories of needs, mainly related to the goal to facilitate a seamless accessibility and usage of the maritime service and, in particular, exchanges between different transport modes.

1. **Re-organisational aspects related to terminal location and role**. In particular, this imply the centralization and uniqueness of the maritime station within a general re-organisation process of the area of the Molo IV; it is to underline how the other regional maritime PT services are currently stopping, rather than at Molo IV, in another pier ("Molo dei Bersaglieri") at a walking distance of about 800 metres.
2. **Information provision to the users**, which is a key driver for supporting an improved and increased usage of the service as well as removing a relevant obstacle to the execution of intermodal trips. Obviously, target users of the services (tourists), in general, are particularly suffering from the difficulties related to lack of information and linguistic barriers that can be easily improved by the implementation of currently easily available ICT solutions. Furthermore, in this purpose travel information supporting intermodal transport can be pursued in close synergy with information provision for promoting tourism.
3. **Connectivity and accessibility**, also taking into account the Old Port area re-organisation mentioned in the following (which encompasses also the realisation of the new bus station), In this purpose, it is to mention the need of improvements with reference to both terminal accessibility (e.g. walking path from the railway station). Still in this case a limited intervention could allow a relevant improvement, thus achieving the potential related to the strategic positioning of the terminal.
4. Additionally, further possibility of increasing the appeal of the maritime service per se such as improving the comfort of the trip and elaborating on possible improvements of the timetables or on the establishment of new connections, must be considered.
5. Moreover, the confrontation with stakeholders allow to verify the existence of various initiatives implying a great potential for a exploiting synergies as well as the corresponding need to adequately coordinate all these efforts.

Users 'survey

Furthermore, in order to gather elements for a proper assessment of the situation during Summer 2018 a users' survey encompassing on-the-field interviews has been carried out in the framework of the INTER-CONNECT project by submitting a questionnaire to users (including potential ones) of multimodal transport service in Trieste.

Since the surveys were jointly addressing the assessment of the ADRION area connectivity and the local Case analysis the objective of the questionnaire was two-folded. Therefore, it was based on the general format shared at project level and mainly targeting users from other ADRION countries. However, it was also provided with additional specific questions tailored on particular aspects related to Trieste Case study, with particular reference to the cross-border maritime services addressed by the sub-case A. The survey was carried out by directly interviewing users of the service in correspondence to the maritime station at Pier IV ("MOLO IV") in Trieste.

MOLO IV SURVEY KEY DATA

Location: Trieste Marittime station Molo IV (Pier IV)
Period 3 August – 9 September
307 interviews carried out

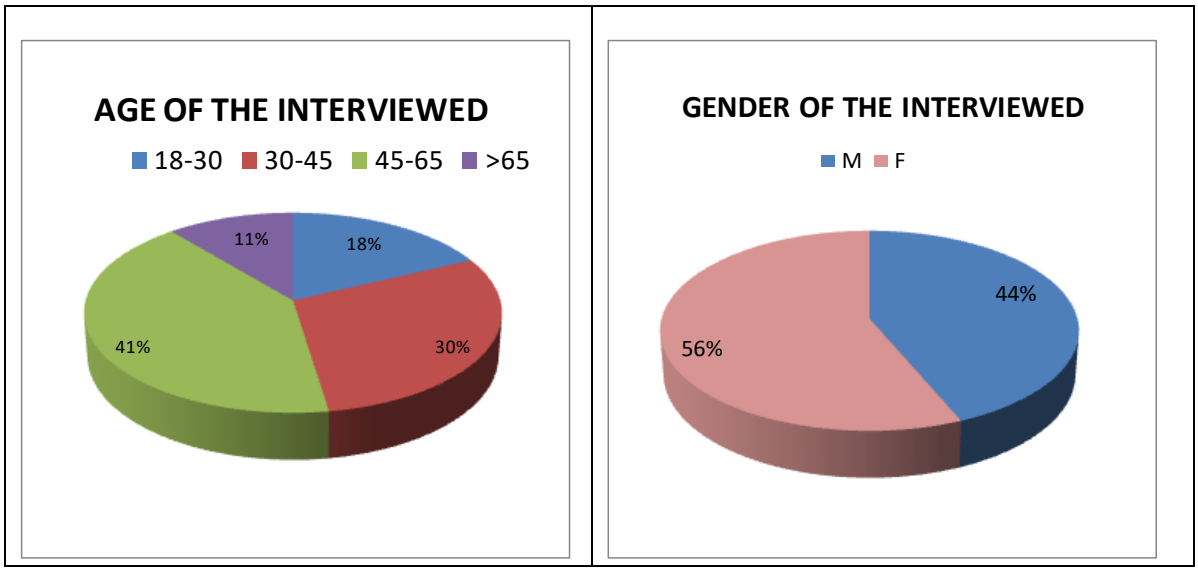


Figure 57:Characteristics of the interviewed sample at Pier IV

Furthermore, it is to mention that the interviewed provided synergic support to other surveys carried out within the ITA-CRO MOSES project (i.e. specifically addressing passengers of the maritime services linking Trieste to Losinj).
This survey allowed to provide additional data based on the same questionnaire developed in Inter-Connect [4].

ON-BOARD MOSES PROJECT SURVEY

- Location: on-board of cross-border the maritime service between Trieste and Losinj
- Period 17 August – 20 August
- 61 questionnaires collected

The user's surveys have provided relevant outcomes with respect to both the local case and the analysis of connectivity in the ADRION area.
With particular reference to the interviews carried out at Pier IV to the users of the cross-border maritime service, it is to report in general high level of satisfaction with reference to the main attributes of the transnational maritime service.
Furthermore, the answers to the additional questions specifically related to the Trieste case study, allow to assess the need of improvement related to specific aspects in order to increase the usage and appeal of Public Transport for land-side accessibility from/to the Maritime Terminal (Molo IV).
When looking at specific answers (both with reference to the shared part of the questionnaires and to those specifically related to the local cases) a high heterogeneity is characterising the sample also with reference to perception of relevant aspects, acceptability thresholds and specific needs.

[4] On the other hand, it is to underline the different modality of the survey since the questionnaires were distributed on-board to the passengers willing to fill-in during the trip (i.e. without the close interaction with an interviewer). Furthermore, the collected questionnaire represents a less balanced sample (e.g. in terms of age distribution and nationality). Hence, the outcomes of the two surveys (interviews carried out at Pier IV and questionnaires collected on-board) in general are not fully comparable in terms of statistic representativeness and significance.

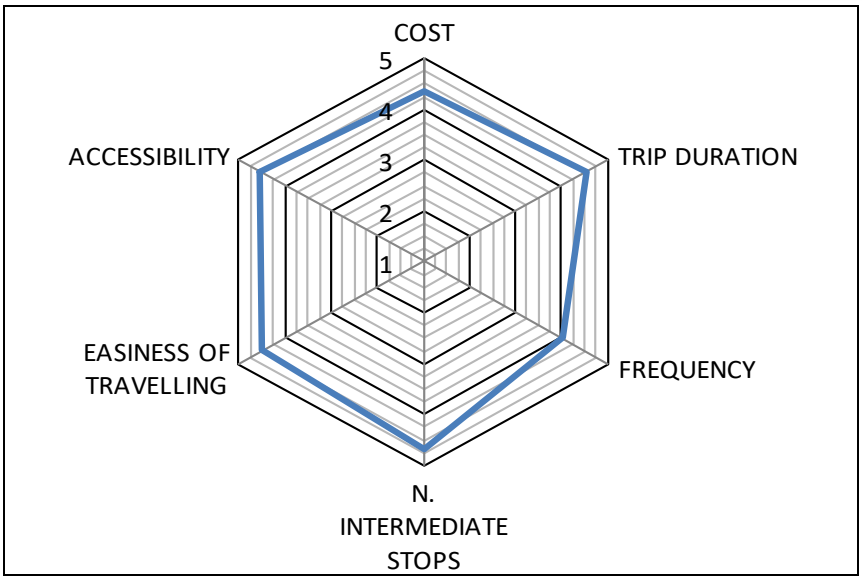


Figure 58:Level of satisfaction with reference to specific attributes of the transnational maritime service (rating from 1 to 5)

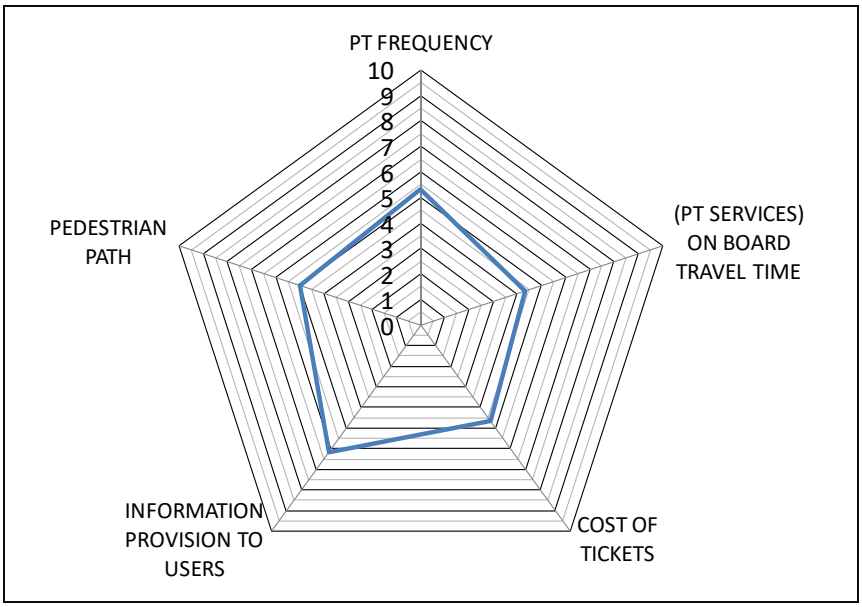


Figure 59:Level of satisfaction with reference to specific attributes of the transnational maritime service (rating from 1 to 10)

In general terms it is to report that the CB maritime service is providing an appealing and satisfying connection esp. for touristic purposes. In particular, it is to underline that:

- The location of the Maritime Station (Molo IV) is ensuring high potentials and attractiveness to the users; some specific issues related to accessibility and interconnectivity are reported by some interviewed (e.g. pedestrians coming from the railway station);
- for occasional users limited perceived shortcomings are not hampering the choice and general evaluations of the service in case of a single touristic trip (more than 2/3 of the interviewed were first-time users);
- Information provision could be improved with reference to different aspects -> possibly leveraging the usage by non-residents and foreigners (more than 1/3 of the interviewed is made-up by residents in Trieste).

Updates on the service

A further novelty recently brought during the case study implementation and also implementing some of the provided inputs has been the accomplished tendering of the services for the period 2019-2021.

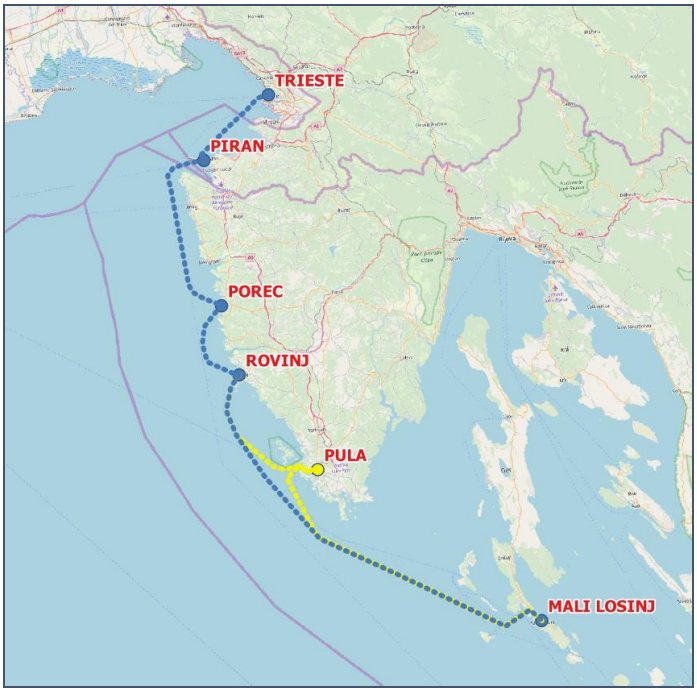


Figure 60:The current (2019 in blue) and previous (2018, yellow colour) maritime seasonal services

It is to emphasise that it has implied the implementation of some of improvement addressing the ascertained needs, such as the improved information provision, comfort along with some fine-tuning of the service as well as re-definition the fare policy. In this purpose, it must be noted that according to the new contract the stop in Pula is no more operated.

As a consequence, during the 2019 season it was registered a remarkable increase in terms of number of users (see).

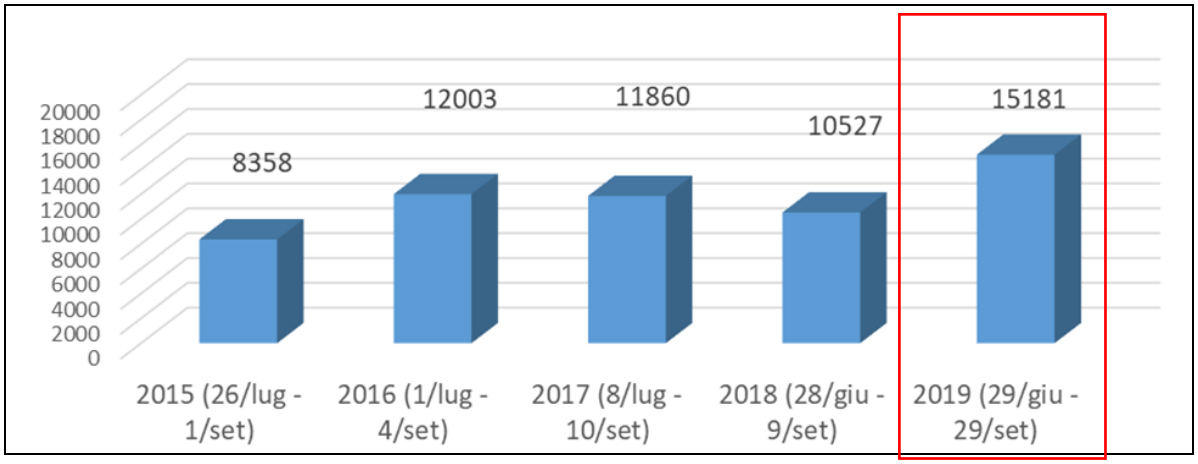


Figure 61:Passengers per year of the existing transnational maritime service, including 2019 season.

Framing the measure in the wider set of (synergic) interventions fostering intermodal transport (at local/regional/transnational level)

Other Interreg projects addressing FVG cross-border connectivity

The sub-case A, in particular, within the general context of the various initiatives carried out or supported by the FVG Region to foster intermodal connections at cross-border level according to a strategic approach in compliance with the aforementioned Regional Plan for Local Public Transport.
In this purpose, in addition to the already cited EA SEA-WAY and MOSES addressing specifically the maritime lines addressed by the sub-case A, other relevant initiatives concerning are to be mentioned.
With reference to **connectivity with Austria**, the MICOTRA service that, starting from an Interreg project co-funded within Italy Austria Programme 2007-2013, has allowed to re-establish rail connectivity between FVG and Carinthia (AT). In particular, the MICOTRA service is operating with two daily cross-border train services between Villach (AT) and Udine (IT). Furthermore, a pilot activity of the CONNECT2CE project, co-funded by the Interreg Central Europe Programme, is currently testing the extension up to Trieste of the service during weekends and festivities.
Concerning **connectivity with Slovenia**, apart from the already mentioned initiatives, it is to report the following recent improvements with particular reference to linking Trieste and Ljubljana:

- In the framework of the CROSSMOBY project, co-funded by the Interreg Italy-Slovenia Cross border cooperation Programme) a new cross-border passenger train service linking the two cities started on September 2018, with a couple of trains per day, one of which extended to Trieste Airport and Udine;
- In the context of the CONNECT2CE project, co-funded by the Interreg Central Europe Programme) an integrated cross-border ticket was launched on March 2019 providing a new intermodal PT connection combining the train service operated by Slovenian railways and the buses operated by Trieste Trasporti, revitalizing the role of the Villa Opicina railway station as a secondary node with significant cross-border relevance.

Moreover, as clarified in the following paragraphs related to sub-case B, CROSSMOBY is also addressing the cross-border maritime connectivity between Slovenia and FVG region.

Interventions being carried out by the Municipality of Trieste

Moreover, it is to report the relevance of the urban re-organisation that has been carried out in the overall area. In fact, Molo IV should become integrated in the currently being re-organised Old Port area and provide its Southern access. In this purpose, it is also to mention the ongoing development of the City of Trieste Sustainable Urban Mobility Plan (SUMP) which provide an overall strategic framework, (encompassing all the Trieste area) to Old Port area re-organisation. It is important to underline that these interventions are including both infrastructural and non-infrastructural interventions according to a comprehensive approach paying particular attention to sustainable solutions (e.g. bike-sharing). The innovative character of the pursued approach is also testified by the fact that the SUMP is being developed within the PORTIS-CIVITAS project co-financed by the Horizon 2020 Programme (i.e. the EU Programme dedicated to Innovation and Research). Furthermore, strong synergies are to be underline also with a further set of initiatives carried out by the municipality addressing promotion of sustainable tourism with particular reference to information provision.

Identification/preliminary assessment of the different measures to be developed and implemented

Summarising the main outcomes from the analysis carried out within Sub-case A, a list of different measures can be envisaged for improving both the transnational maritime services and the possibility

of exploiting the synergies with other modes of transport as well as with the goals of fostering sustainable tourism in the analysed area.
These measures, which are described more in detailed in the following, are addressing the following main thematic areas:

- Improvement of the services with particular reference to information provision to users
- Accessibility and streamlining interchanges with other modes of transport
- Promotion of sustainable tourism

SUB CASE B

According to the strategic framework previously described, the sub-case B is focusing on another priority of the Region FVG: to better understand the potential (and the existing demand) of a new maritime public transport connection from Trieste (Muggia) to Koper (Slovenia), also considering the important flows of cross border commuters and lack of efficient cross border public transport connections between these two cities.

Mapping the addressed issues and background analysis

In addition to the general background already provided, the context analysis of sub-case B is addressing the cross-border area south from Trieste.
Apart from the city of Trieste, the sub-case is focusing on two municipalities across the ITA-SLO border, making up the northernmost part of the Istrian coast:

- Muggia (about 13.000 inhabitants) on the Italian side;
- Koper (about 25.000 inhabitants) on the Slovenian side.

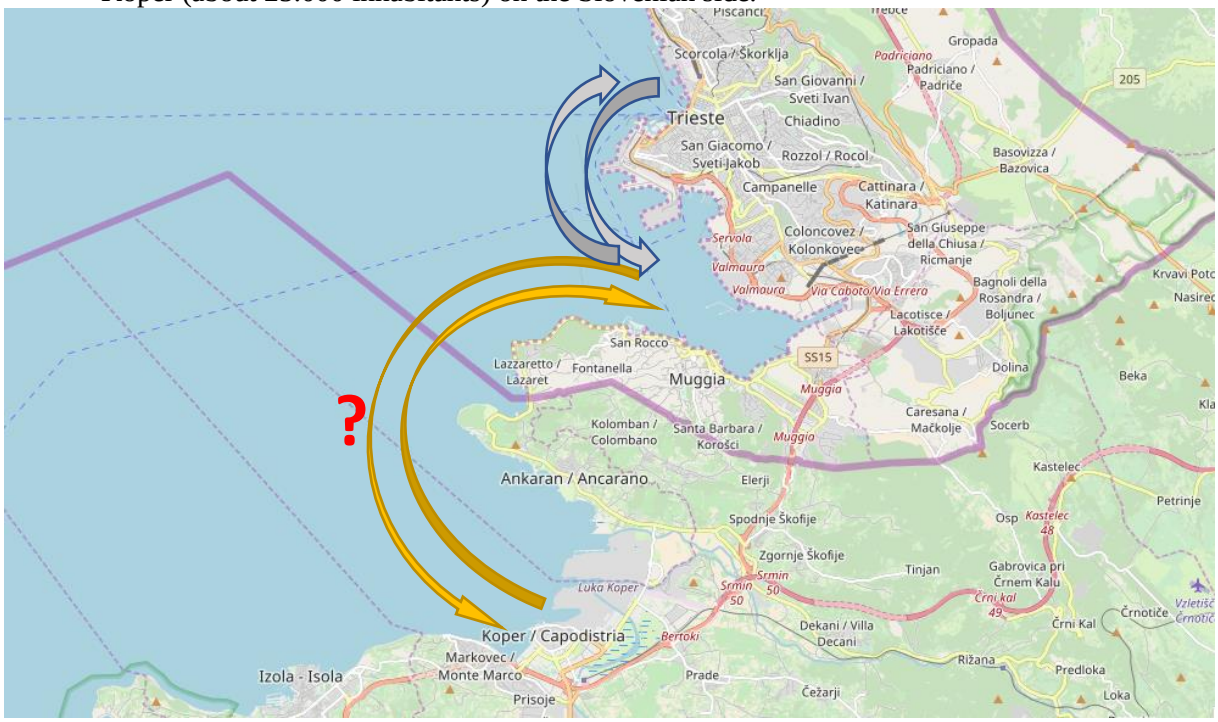


Figure 62:The existing PT maritime service Trieste-Muggia and the potential extension Muggia - Koper

As reported in the Figure 17, in the analysed context a maritime service is currently connecting Trieste with Muggia. As represented previously Figure 3 and Figure 4, it is the only annual maritime PT service in FVG region (since all the other ones are seasonal).
Efficient public transport connections between Muggia and Koper, instead, are missing. The distance between these two cities is about 12 km (20 minutes by car). Nevertheless, a direct cross-border bus service or maritime connection is currently missing.

A cross border bus connection was experimented during 2015 by Avtobusni Prevozi Rižana for two months through the TRADOMO project funded by the Interreg CBC Italy Slovenia Programme 2007-2013 and implemented from 2012 to 2015: the aim of this experimental phase was to demonstrate the existing needs of Italian and Slovenian users concerning an efficient cross border connection. However, after the experimental phase this bus connection was not further operated.

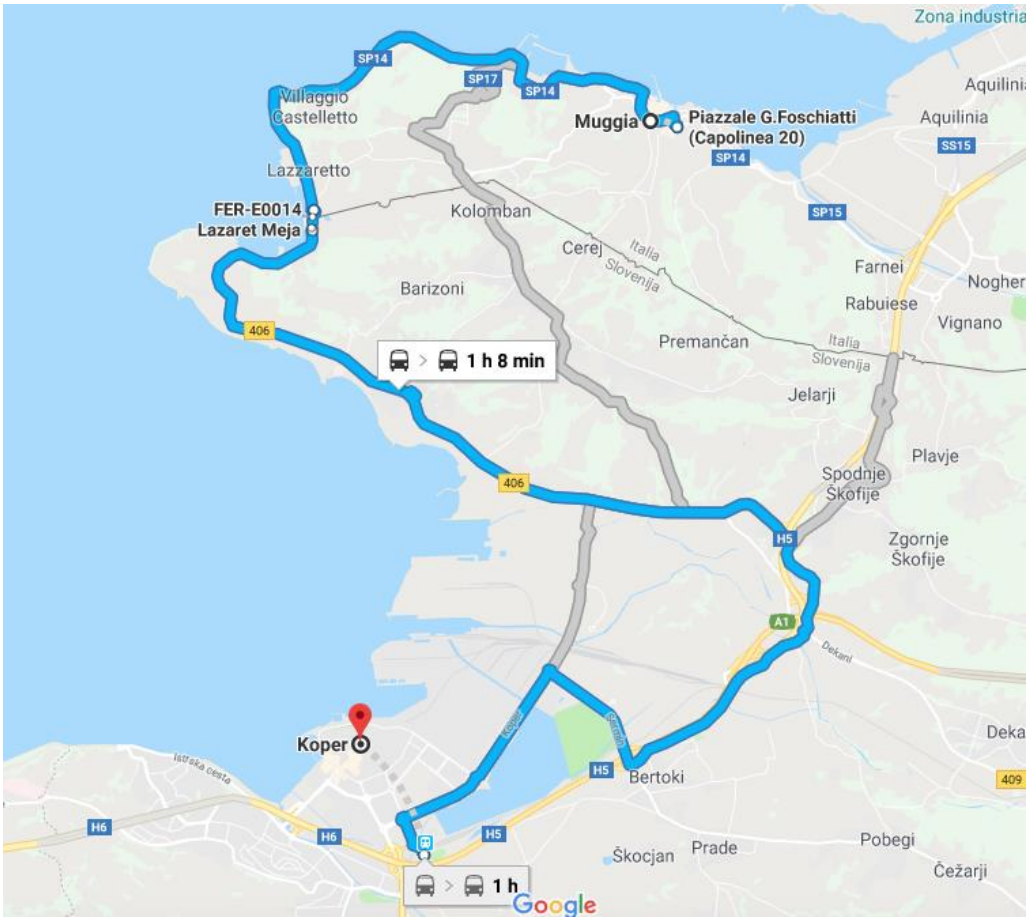


Figure 63:Options for reaching Koper from Muggia.

Considering the existing public transport bus service operated by the Italian and Slovenian operators, the connection between these two cities takes more than one hour.
In order to efficiently connect the port of Muggia (served by the PT service) and the city of Koper, FVG region intends to investigate the possibility to establish a new service.
Additionally, it is to consider the presence of a bus service by "Arriva" linking Piran-Izola-Koper-Trieste. However, this connection does not serve the centre of Muggia.
Furthermore, it is to underline how this could be seen as an additional link within a wider set of maritime connections including, along with seasonal services mainly related to touristic purposes, also the existing Trieste-Muggia service (operated throughout the year).

Identifying the main needs

The analysis of the needs has been carried out by interacting with the local stakeholder on top of the previously described background analysis. Furthermore, the outcomes of the analyses carried out within the already mentioned TRADOMO project has already allowed the stakeholders to identify the main needs related to the connectivity of the area between Muggia and Koper.

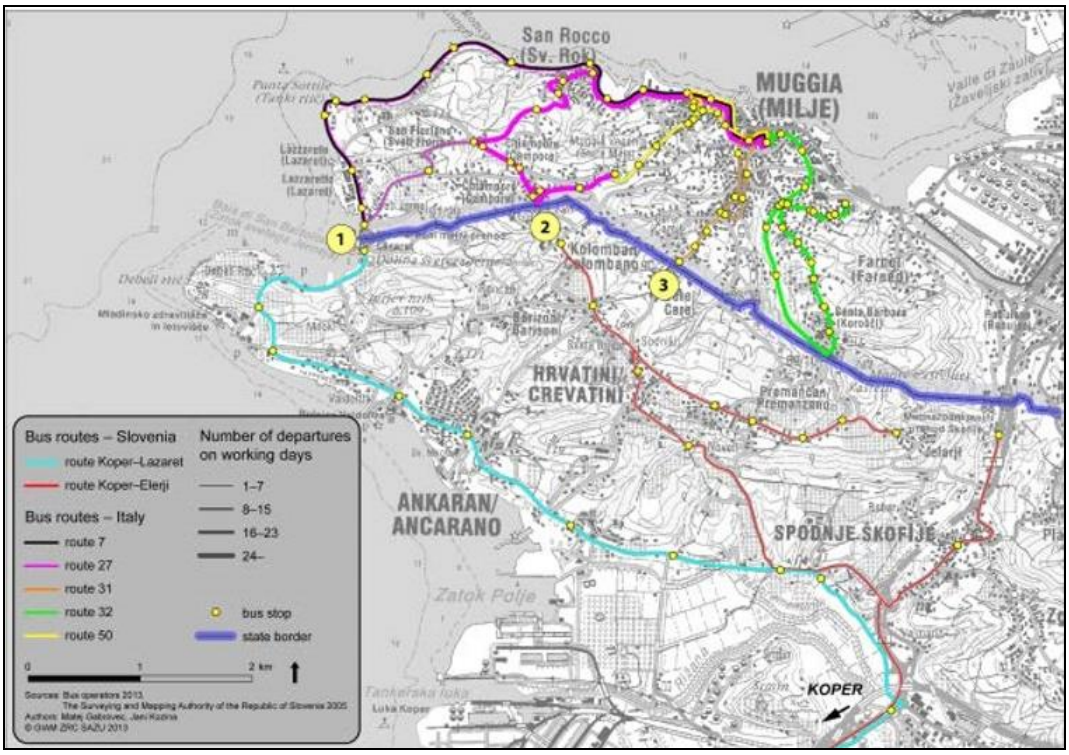


Figure 64: The bus network of the Muggia peninsula analysed by TRADOMO project. Source: TRADOMO project

In particular, the analysis of the existing bus service (i.e. without the temporary service tested within TRADOMO) allowed to register, apart from the absence of cross-border connections, the presence of relevant gaps (ranging from 300 metres to 2 kms) in correspondence of the border (in case to be travelled on foot), thus hampering the possibility of seamless interchanges between bus services.
Furthermore, within the project the presence of a certain numbers of cross-border commuters between the two municipalities (including pupils of linguistic minorities attending the school beyond the national border) was estimated.
Given the relevance for the local municipalities of the mentioned issues, it was possible to ascertain a relevant interest among the stakeholders on the sub-case B.
In fact, the stakeholders have confirmed the importance of the existing service (which also complement a bus connectivity between Muggia and Trieste) and in related potential improvement or interconnections. In this purpose, they strongly agree on the importance of the proposed new maritime service between Muggia and Koper for tourism-related trips but also for the residents.
Furthermore, it was stressed how strengthening the connections with Trieste is particularly important also due to the accessibility problems of Koper (given the limitations of the current railway network). Furthermore, this enhancement is in line with the objectives of tourism promotion in the Koper area. In this regard, it was emphasized that these efforts are aimed at providing an offer with specific characteristics and target (e.g. sports tourism). Hence, it can be easily framed in a perspective of synergic complementarity with the other strong tourist areas located in neighbouring contexts.

Framing the measure in the wider set of (synergic) interventions fostering intermodal transport (at local/regional/transnational level)

The sub-case B, it is to be meant as part of the (previously described) integrated approach to the cross-border mobility fostering the development of sustainable multimodal solutions (rail/bus/waterborne transport/bike sharing). This approach can be effectively carried out by capitalizing previous projects

but also by acting synergically with ongoing ones, such as the Sustainable Urban Mobility Plans being developed or implemented in all the main centres of the cross-border area.
In fact, along in addition to the already mentioned case of the city of Trieste, also the city along the Slovenian coast are implementing their own SUMPS. In particular, the recent SUMPs already developed by the municipalities of Koper, Piran and Izola agree on calling for the development of maritime public transport services. Furthermore, they envisage the development of an integrated bike sharing system. Hence, these initiatives are fostering cycle-mobility and cycle-tourism as well as related synergies according to an intermodal approach. In this purpose, within the analysed context it is to mention the development of the "Parenzana" cycle-route (see Figure 21) revitalising the alignment of a defunct narrow-gauge railway.

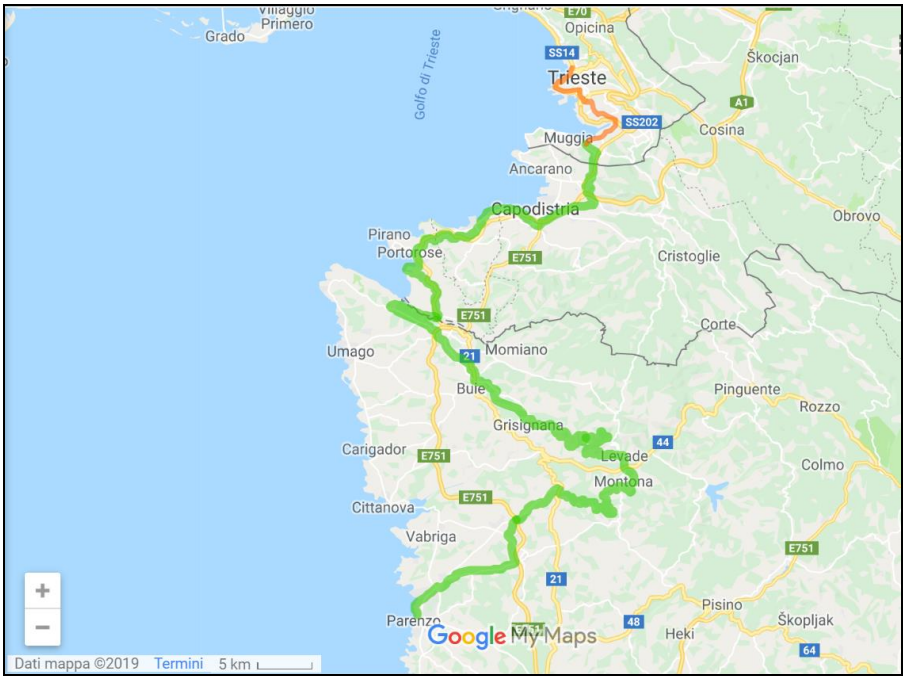


Figure 65: The "Parenzana" cycle-route

In terms of synergies, it is also to consider that since the first stretch of the "Parenzana" between Trieste and Muggia (see part in red colour in Figure 20) is not properly a cycle-route, users starting from Trieste are commonly using the maritime service for reaching Muggia and then continuing trip by bike.
Last but not least, with reference to the specific object of sub-case B, it is to underline the relevant opportunities arising from the already mentioned CROSSMOBY project. In fact, significant synergies are been ascertained with particular reference to an activity of the CROSSMOBY project where, in one of the pilot activities is verifying the possibility of co-financing a pilot maritime service on the Koper-Muggia link as well as a further synergic service on the Slovenian coastline (presumably linking Koper and Piran).

Identification/preliminary assessment of the different measures to be developed and implemented

Summarising the main outcomes from the analysis carried out within Sub-case B, it is to report a relevant lack of connectivity with respect to mobility needs of both residents and tourists. This is particularly relevant given also the general limited accessibility of the Koper area.

Hence, different options for new waterborne service are to be investigated through synergic measures, also taking into account synergies with other mode of transport (including cycle tourism) which are described more in detail in the following.

Phase 2. Pre-feasibility study

The case study analysis has let to identify a set of measures to be pursued through an agreement between relevant stakeholders (described in the following chapter) on how to proceed further on the basis of a thorough and shared analysis. This is meant to be achieved through a Memorandum of Understanding identifying concrete measures to be implementing and defining tasks and roles for each involved actor.
In particular, the following measures are already been identified, after two rounds of discussion with relevant stakeholders including two Round Tables (held in July 2018 and May 2019).

Table 61: Sub case A

Identified/shared measure	Involved stakeholders
MEASURE A.1) Promoting interventions to improve infrastructure accessibility from/to the Pier IV passenger terminal (with particular reference to path linking the Railway Station - Via Cavour - Via Porto Vecchio - Passenger Terminal - Pier IV)	Municipality of Trieste Autonomous Region FVG
MEASURE A.2) Promoting initiatives concerning information provision in the terminal to passengers both of a touristic nature (routes, areas of interest, existing applications, ...) and with reference to the usability of the local public transport	Municipality of Trieste Trieste Trasporti Autonomous Region FVG
MEASURE A.3) Promoting the centralization of maritime LPT services at the Molo IV Passenger Terminal	Autonomous Region FVG
MEASURE A.4) Promoting, in synergy with the ongoing initiatives, sustainable mobility solutions (e.g. bike sharing) at the Pier IV Passenger Terminal	Municipality of Trieste

Table 62: Sub case B

Identified/shared measure	Involved stakeholders
MEASURE B.1) Promoting maritime LPT initiatives (for tourists/commuters/residents) through the extension of existing services	Autonomous Region FVG Municipality of Koper Municipality of Muggia
MEASURE B.2) Promoting an integrated approach to the cross-border mobility based on LPT (rail/road/waterborne services) also encompassing other sustainable transport solutions (e.g. bike sharing at cross-border level)	Autonomous Region FVG Municipality of Koper Municipality of Muggia

In the case of sub-case A, the already accomplished tendering of the cross-border maritime services for the years 2019-2021 implies a relevant maturity of the implementation process (also in terms of financial coverage).
Some further details are to be reported, instead, with reference to sub-case B, which is addressing the developed of a new service whose characteristics are not determined in detail yet.
In this purpose, the interactions with stakeholders allowed to point out that this connection, though been strongly targeting tourist, would also a relevant important for residents and commuters. However, at least as a first step, a more realistic options seemed related to the activation of a seasonal service (esp. during weekends and festivities).
As far as fund-rising is concerned it is to report the opportunity of making use of synergic EU projects for covering the cost of the testing phase (as already exemplified, among others, by the experiences of the EA SEA-WAY and MOSES projects). In this purpose, as already mentioned, significant synergies are been ascertained with particular reference to an activity of the CROSSMOBY project where, in one of the pilot activities is verifying the possibility of co-financing a pilot maritime service on the

Koper-Muggia link as well as a further synergic service on the Slovenian coastline (presumably linking Koper and Piran).
Concerning the typology of the service an appropriated solution seems to conceive it as a distinguished though coordinated with the existing one (Trieste-Muggia) and not as its extension. This approach is to be followed in order to guarantee keeping up the current travel times and frequencies on the consolidated connection.
A remarkable aspect that is to be further assessed in a future feasibility study is related to the impact of rules and regulations that a cross-border waterborne transport service has to comply with. These rules are related to the following (distinct) thematic fields:

Safety

The need for ensuring safety from the external factors (e.g. storms, accidental collisions, fire) providing risk and threats to maritime transport is addressed by the International Convention for the Safety of Life at Sea (SOLAS), an international maritime treaty[5] that sets minimum safety standards in the construction, equipment and operation of merchant vessels.
A specific prescription, which can eventually result in a restrictive condition with respect to the possible typology of vessel, is related to the fact that the regulation is allowing only specific materials (e.g. metal) for the hull of the ships.

Security

Broadly speaking, for addressing all the different external factors potentially causing harm or risk the term safety is frequently used. However, more precisely, safety is the aspect of being secure against unintended threats while security is the protection against deliberate threats.
In particular, "maritime security" means the combination of preventive measures intended to protect shipping and port facilities against threats of intentional unlawful acts.
These aspects are specifically addressed by the "International Ship and Port Facility Security" (ISPS) Code[6], which prescribes responsibilities to governments, shipping companies, shipboard personnel, and port/facility personnel to "detect security threats and take preventive measures against security incidents affecting ships or port facilities used in international trade."
In particular, it prescribes specific checks and minimum-security equipment like scanners and metal detectors etc., which must be available at all times within the port facility whose layout must be designed as to avoid the breach of security inside the port itself. Hence, it implies setting up physical barriers, such as (at least temporary) fences, to be used for keeping restricted areas along the boarding and landing paths separate from the external.
Hence, it implies specific requirements in term of port terminal layout and the equipment to be available on-site.

Customs controls

In general, setting-up an international waterborne transport could encompass the obligation of performing customs procedures at the port areas for boarding or landing passengers.
In fact, with reference to sub-case A this is a major aspect implying control in case of service between ports located internally (Italian and Slovenian) and externally (Croatian) to the Schengen Area. However, with specific reference to sub-case B, since the foreseen stops are all located in Italy and Slovenia (i.e. within the Schengen Area), no relevant issues are expected in this purpose.

[5] The first version of the SOLAS Treaty was passed in 1914 in response to the sinking of the Titanic (1912). It underwent different amendments and updates implemented by the Maritime Safety Committee (MSC) of the International Maritime Organization (IMO).
[6] This regulation came into force in 2004 as an amendment of the SOLAS (Chapter XI-2).

Obviously, the operations and controls resulting from the afore-mentioned regulations imply the availability of enough space adequately provided with facilities for accommodating passengers waiting and queuing before and during the embarking and disembarking procedures. Furthermore, another requirement of port area, to be duly checked, is related to nautical accessibility, is the availability of a seabed endowed with adequate draught.
Hence, all the aforementioned rules imply a set of different requirements and set-up to be implemented in the port's areas.
The compliance of Pier IV in Trieste, being already used by the services related to sub-case A, is already ascertained. Instead, concerning the other two stops devised for the sub-case B proposed service, (i.e. Muggia and Koper), these aspects must be duly checked.

Service authorisation

A passenger transport must be duly authorised by a competent authority either as commercial or as public transport service. Furthermore, in case it is acknowledged as public transport it can be accordingly supported financially by public funding (art 14 p. 5 of the Regional Law 23/2007). According to the regulation, for a cross-border service connecting to bordering areas located within 150 km, the competent authority is FVG administration (according to the Regional Law 23/2007, as clarified in the following, within the paragraph addressing the main national and regional policies).
In this purpose, it is also to consider that, provided the awarding procedures is carried out accordingly, the compliance to state aid rule is guaranteed by the authorisation received by FVG Autonomous Region from the European Commission in 2007 (as required by article 88 of the EC Treaty).
The devised solutions for both sub-Case A and Sub-case B have been shared among stakeholders thus reaching a general consensus and ensuring a clear commitment from key actors (i.e. those who are in condition to further develop the case study up to the actual implementation and operation stages).
In this purpose, a key milestone is represented by the signature of the Memorandum of Understanding, that took place in Trieste on 16/12/2019. As shown by the following representation and clearly stated in that occasion, this achievement rather than a final goal, this achievement has to be considered a kick-off towards the remaining relevant steps to be carried out.

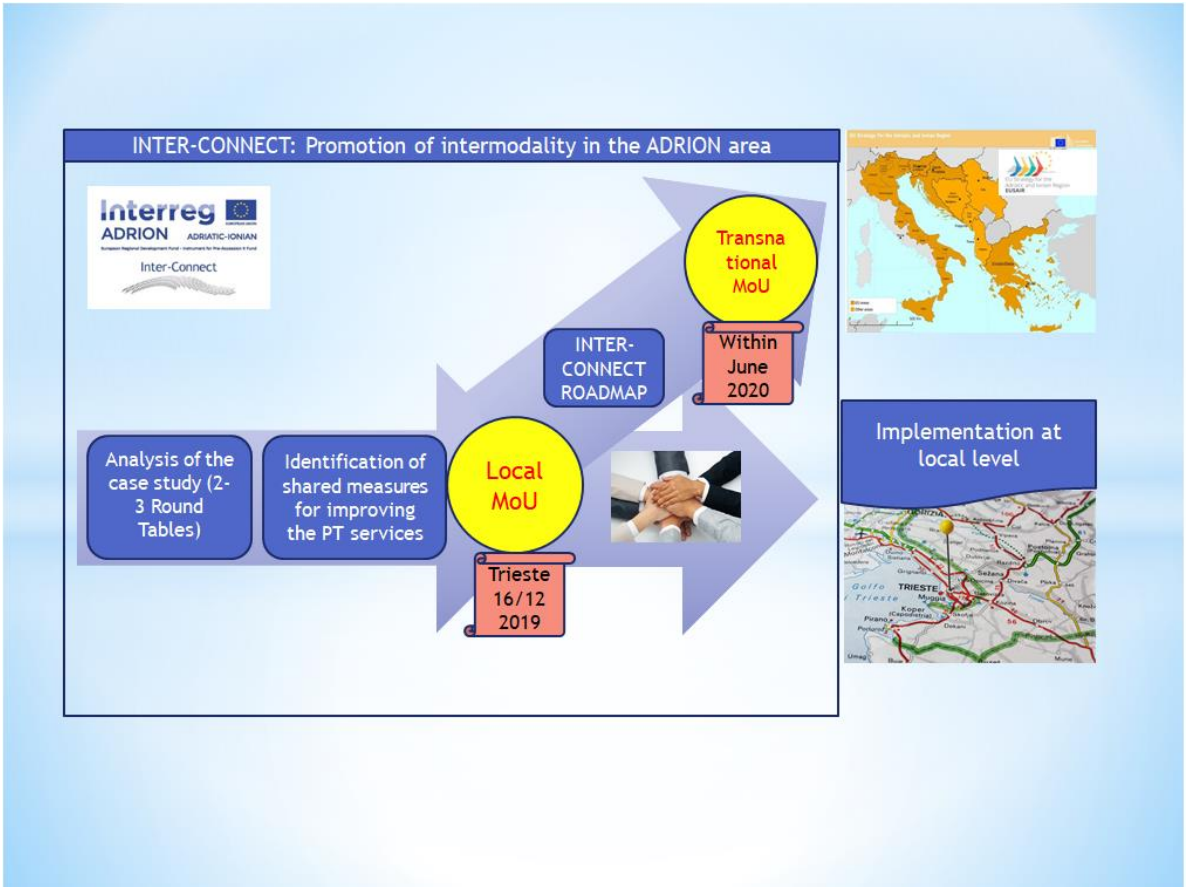


Figure 66: Case study implementation process

3.5.2 Stakeholders engagement

The objective of this paragraph is to identify the most relevant case study stakeholders and analyse their main roles.

Main public and private stakeholders involved

This paragraph intends to map and describe the main public and private stakeholders involved in the definition and management of the Inter-Connect case studies. This analysis in particular is focussing on the role of these stakeholders in allowing the full case studies' action definition and/or implementation and management.

Table 63: Stakeholders involved in the case study

Type of stakeholder	Stakeholders and brief description	Role in the case study
Public authority / decision makers	• Autonomous Region Friuli Venezia Giulia - Regional authority • Trieste Municipality - Local authority • Koper Municipality - Local authority • Muggia Municipality - Local authority	Public authorities are promoting and supporting and, in case funding the development of the maritime service as well as the public transport they are interconnected with. Furthermore, with particular reference to the Municipalities (e.g. Trieste), they are dealing with the urban re-organisations of the areas where a maritime station is located.

Private operators	• Trieste Trasporti – Public Transport operator • Samer & Co	The private operators are involved in the operations of both surface (bus) and waterborne passenger transport service
Citizen/Customs	• Viaggiare Slow - Citizen associations	The association is fostering the development of sustainable tourism with particular reference to cycle tourism
Others	• Regional Development Centre Koper	The regional development centre is supporting the development of initiatives addressing economic development including sustainable transport and tourism solution such as those addressed by the case study

Engagement levels

The level of stakeholders' commitment increases with the responsibility it is given to them. Higher commitments mean better results but also higher expectations from the stakeholders.

Table 64: Level of engage of stakeholders

Stakeholder	Level of commitment	Brief description of the commitment level
Autonomous Region Friuli Venezia Giulia	Collaborate and empower	Planning role and in particular it is to report the fact that it is financing and tendering the cross-border maritime services
Trieste Municipality	Collaborate and empower	Key local level stakeholder, involved in the accessibility of the terminal and urban city centre as well as of the promotion of sustainable tourism
Koper Municipality	Collaborate and empower	Key local level stakeholder involved in particular in sub-case B
Muggia Municipality	Collaborate and empower	Key local level stakeholder involved in particular in sub-case B
Trieste Trasporti	Collaborate and empower	As PT operator in the province of Trieste, it is a key player at operational since it is managing at local level both bus and maritime services
Samer & Co	Consult and collaborate	Involved in the operations of Sub-case A services
Regional Development Centre Koper	Consult and collaborate	Addressing sustainable mobility and accessibility needs of the South Primorska planning region, including the Slovenian coastal area and its hinterland
Viaggiare Slow	Inform and Consult	Promotion sustainable tourism (esp. cycle tourism) and related needs

Stakeholders influence-interests matrix

Table 65: Influence-interests matrix

	Low Influence	High influence
Low stake	-	-
High stake	Samer & Co, Viaggiare Slow	Autonomous Region Friuli Venezia

		Giulia, Trieste Municipality, Koper Municipality, Muggia Municipality, Trieste Trasporti, Samer & Co, Regional Development Centre Koper

Engagement Strategies

During the case study implementation, as reported in the following table, different means have been used for involving and engaging the different stakeholders. The choice proved to be correct as to cope with different needs:

1. Start involving and contacting relevant stakeholders
2. Collecting information as to ensure as to map the issue and provide a sound knowledge base with respect to a pre-identified set of aspects to be investigated
3. Focus and deepening on specific aspects interacting freely with a committed expert/pertinent stakeholder
4. Favouring the exchange of ideas and brainstorming ensuring all different viewpoints to be represented
5. Reaching a consensus and ensuring long-term commitment
6. In particular, it is to underline the importance of monitoring, tracking the developments taking place in the analysed context and adjusting accordingly the development of the case study throughout the months. These tasks can be effectively pursued by iterating the activities corresponding to the points 3 and 4 (e.g. bilateral meetings and round tables) of the above list.

Table 66: Engagement strategies

Engagement strategies	Do you use this strategy in your case study? (Yes/No)	Brief description of the engagement strategy used
Invitation Letters	Yes	They provide a relevant first step for informing about the initiatives and getting involved the stakeholders
Questionnaires and Surveys	Yes	According to project activities, surveys were performed on the topics of sub-case A
Exhibitions and Road Shows	No	
Public Meetings	No	
Use of the full range of the media	No	
Structured interviews	Yes	Bilateral meetings and interviews with key local stakeholders were organized.
Forums	No	
Focus Groups	No	
Advisory Committee	No	
Workshop	No	
Round Table Discussions	Yes	The round table proves to be a relevant occasion for a comprehensive update as well as for developing a shared vision and, consequently, jointly agreed decisions
Public-private agreement	No	
Participatory processes	Yes	In addition to the main meetings involving all the stakeholders (round tables) bilateral contacts (via phone calls, emails) and meetings are necessary for updating on specific aspects and keeping the on the case study development
Memorandum of Understanding (MoU)	Yes	Through this declaration the stakeholders are committing themselves (specifying the role of each stakeholder) to the actual implementation of the agreed measures even beyond the project lifetime.
Others (please add)		

3.5.3 Institutional and Political Sustainability

This paragraph analyses the policies and governance schemes supporting the Inter-Connect case studies definition and/or implementation and management.

Main national and regional policies supporting the case studies

As far as intermodality and sustainable transport are concerned a key reference at national level is provided by Connettere l'Italia ("Connecting Italy"), a strategic plan adopted by the Ministry of Infrastructure and Transport. Four main objectives represent the directions towards which "Connettere l'Italia" should go:

1. Accessibility to territories, Europe and Mediterranean Sea
2. Safe and sustainable mobility
3. Quality of life and competitiveness of urban and metropolitan areas
4. Sustain industrial commodity chain development with policies

Regarding intermodal transport, three broad actions are set:

1. Network nodes accessibility and network inter-connection
2. Mode share shift towards sustainable modes of transport
3. Intermodality promotion

The document is providing an updated planning framework, emphasising the importance of thoroughly assessing the need and role of each interventions, including the importance of even small interventions capable to eliminate gaps hampering the connectivity. This approach is also emphasising the synergies and complementarity of the different modes approach, thus fostering co-modality and sustainability.
This planning framework is regularly updated (as an Annex) within the more general one provided by the Economic and Financial Document ("Documento di economia e finanza" - DEF), which is the main instrument for financial and economic planning. The last release, DEF 2019, has been recently issued.
In this overall framework, a relevant deal is paid to sustainable tourism and related mobility needs.
In this purpose, it is to mention the transport policy plan "Piano straordinario mobilità turistica 2017-2022", investigates accessibility from entry points within Italian territory (port, airports, and railway stations) and focuses on multimodal accessibility within Italy and abroad. The Plan establishes 4 objectives:

- Increase tourists' accessibility to revitalize tourism
- Promoting transport infrastructures as a fundamental element of tourism
- Digitalizing touristic sector, which includes mobility
- Promoting sustainable and safe transport modes

To integrate mobility and touristic services the Plan enhances the creation of integrated ferry-bus-rail fare system, for summer season and bus-rail-ski pass, for winter season.
At regional level a key reference sustainable mobility development is provided by the general public transport planning process carried out at regional level according to the guidelines of the related plan (approved by Decree of the President of the Autonomous Region n. 80, 15 April 2013). It is important to underline that the attention paid within this document to cross-border accessibility and connectivity. In particular, the plan is specifically addressing the maritime services tackled by the Trieste case study.
In case of FVG Autonomous Region, the subdivision of competences in the fields of road network and (multimodal) transport between the national and the regional level is ruled by the Legislative Decree n. 111/2004[7]. In particular, it prescribes that cross-border transport within a specified range

[7] The Italian Legislative Decree n. 111/2004 is implemented through the FVG Regional law 23/2007.

(which is set at 150 km from the borders in case of maritime transport) is ruled by the Region. The actual operation of the service (encompassing regional and cross-border ones) is implemented by tendering procedures. In this purpose, it is to recall the recently accomplished ones:

- Tendering to a sole operator of the overall bus and maritime regional service for a 10-years period accomplished in 2019, which imply also the possibility of setting-up cross-border services within the flexibility level foreseen (as to adapt to new/emerged needs);
- Tendering of the international (cross-border) seasonal maritime service for the three-years period 2019-2021.

Furthermore, it is to recall the strong synergy of the case study with an overall set of interventions taking place in Trieste urban node, which are being tackled by the Sustainable Urban Mobility Plan currently being developed as well as by analogues planning processes taking place in other centres along the Slovenian coastline. In this purpose, it is to mention, in addition to the European level documents that have firstly set out the SUMP concept, the related National guidelines (esp. Decree issued on 4 August 2017 by the Italian Ministry of Infrastructures and Transport).

Governance scheme adopted

The governance scheme adopted in the case study is based on the approach of fostering the involvement and dialogue between different (public and private) stakeholders through a participatory approach allowing to establish synergy and develop a comprehensive vision of the addressed issue. This participatory approach, fed by data collection process and analysis, is leading (through different steps encompassing both round tables and bilateral meeting) to the signature of a Memorandum of Understanding.
In fact, through this declaration the stakeholders have committed themselves towards the actual implementation of the agreed measures even beyond the project lifetime.
The signature of the MoU took place in Trieste on 16/12/2019 and involved the following stakeholders:

- The Central European Initiative - Executive Secretariat;
- The Autonomous Region Friuli-Venezia-Giulia;
- the Trieste Municipality;
- the Muggia Municipality;
- the Koper Municipality;
- Trieste Trasporti SpA;
- Liberty Lines SpA.

3.5.4 Financial Sustainability

General information on the case study's financial scheme

In general, even though the increased attention and measure identification resulting from the case study development, a detailed definition of the implementation modalities and, consequently, of the related costs is beyond the scope of the present activity.
In fact, the agreed Memorandum of Understanding, rather than operational steps, is setting strategic measures.
Nonetheless, concerning sub-case A, it is to underline the relevance of the initiatives and resources put in place, in particular, by the Municipality of Trieste.
With particular reference to sub-case B, instead, it is to mention that further deepening is to be performed with regards to the choice of specific aspects to (e.g. characteristic of the vessel and of the service to be activated) that can play a relevant role in determining the actual implementation costs.

Case study's general costs

Table 67: Case study's general costs

Cost	Quantification (€)	Notes
Total investment required in € (approximately)	-	n.a. at this stage
Foreseen investment duration (years)	-	n.a. at this stage

Since a quantification of the amounts is not feasible at the time being, a list of items can be provided with particular reference to sub-Case B hypothetical service investment and operation costs.
In this purpose, the main cost items are:

- Costs for investments – related, in particular, to eventual minor interventions in Muggia and Koper
- Operational costs
- Staff costs (considering both on-board staff and Port-area staff as well as a share of Administrative staff)
- Cost (both ordinary and extra-ordinary) maintenance costs
- Fuel consumption

It represents a remarkable cost item which is subject to a high variability also depending on the speed and characteristic of the actual vessel.

- Mooring and station costs
- Insurance costs
- Promotion and communication costs
- Other costs

Expected economic resources and their duration

This paragraph intends to map the economic resources supporting the definition and/or the implementation of the Inter-Connect case studies.

Table 68: Expected economic resources

Kind of funds	Availability and date of availability (YYYY)	State of the financing	Duration	Brief description
European funds	YES	Case A: Activated with reference to the connection to Mali Lusinj (and previously for the other links) – regional funds Case B: Foreseen activation through the definition of a pilot activity within ongoing CROSSMOBY Interreg project; further requests can be envisaged as well	CASE A 2019-2021 / CASE B (tbd)	CASE A: Although maritime PT lines are financed by the Region FVG – additional intervention measures could be financed with different sources (among others EU Funds) CASE B: European funding is relevant for co-funding the testing and start-up phase
National funds	YES			National fund providing the co-financing for public bodies

				participating to Interreg projects
Regional funds	YES	Activated	3 years	The region is financing the consolidated maritime service (case A) through a tendering procedure
Private funds	NO			
Subsidies/Incentives	NO			
Internal/own economic resources	NO			

Foreseen revenues streams/internal economic resources

With reference to Sub-case A, it is to consider that improved inter-connectivity, user information provision as well as fine-tuning in the choice of stop, timing and fares of the service are potentially favouring the increase of users and, consequently, the revenues streams.
With reference to the sub-case B the launch of the service should be accompanied by ticket fares that are providing only a partial coverage of the costs. In this purpose, as a first estimation, a fare corresponding to a value of about 0,7 €/mile can (with reference to one-way trip of an adult person) can be assumed by way of example. Obviously, when defining the fare policy, a more articulated fare and discount policy must be considered. This aspect is particularly relevant in case of a service expected to be frequently used by a single person (e.g. a commuter).

Case study's financial soundness

Table 69: Financial risk levels for each phase of the project

Project phases	Financial risk levels	Description
Phase 1. Concept definition	Low	The concept definition has been already tackled; no relevant financial needs is to be taken into account
Phase 2. Pre-feasibility study	Low	The pre-feasibility study has been at least partially tackled; some further analyses could be carried out through synergic Interreg projects
Phase 3. Feasibility study	Medium	Not all the required financial resources needed for the feasibility study. Synergic Interreg projects could provide the requested resources
Phase 4. Project implementation	High	Not all the required financial resources needed for the project implementation are founded. Synergic Interreg projects could provide the requested resources.
Phase 5. Operation & maintenance	High	Foreseen revenues are not in line with foreseen management and operation costs. The measure needs additional economic resources. With particular reference, to sub-Case B, it could be co-financed as public transport cross-border service.

3.5.5 Technical Sustainability and intermodality promotion

Enabling technologies

The latest ICT developments offer new opportunities to enable a leap forward in the way collective and individual mobility services are organised and offered. This paragraph intends to analyse the enabling technologies allowing the Inter-Connect case studies development and the way these technologies supports the case studies development.

Table 70: Enabling technologies

Enabling technologies	Brief description of the technology and the role (potential role) in the case study
ICT tools information provision	Improved communication and information provision through user-friendly ICT solutions is highly requested and perceived as a key driver for improving the usage of the maritime services as well as connected public transport services
Smart ticketing	Possible further & future developments for allowing smooth intermodal transport solutions
Example: Big data analysis tool	Possible further & future developments allowing to evaluate the actual demand and, therefore, to enhance service planning and operations

Case studies contributions to intermodality promotion and environemental impacts reduction

This paragraph analyses the key numbers allowing to evaluate the case study contributions (or foreseen contributions) to the promotion of the transport intermodality promotion.

Table 71: Key technical KPs

Indicator	Indicators	Data (real data if available or estimated/expected)
Transport modes integrated	Number and mode (train, bus, ship, ferry, airplane, bikes, etc.)	/
MaaS approach	YES/NO	/
Foreseen users	Number	/
Traffic reduction*	% or Co2 emissions	/
Pollution reduction*	% or Co2 emissions	/
Timetable integrations	YES/NO	/
App for final users	YES/NO	/

3.5.6 Other materials and contacts

Contacts of the main stakeholders working on case study are related to Friuli-Venezia-Giulia Autonomous Region:

- Mr Massimiliano Angelotti
- Email: massimiliano.angelotti@regione.fvg.it

Synergies of case studies:
As ascertained during the three round tables carried out, there is a profound need as well as relevant opportunities of exploiting potential synergies by coordinating different initiatives taking place in the Trieste area as well as in the Slovenian coastal municipalities. In order to appropriately address such

challenge a shared and comprehensive vision at cross-border level is highly needed. In this purpose the following table lists the main synergies already identified with different EU projects.

Table 72: Synergies of the case studies with different EU projects

Project	Programme	Duration	Website
CONNECT2CE	Interreg CENTRAL EUROPE	06/2017 - 05/2020	https://www.interreg-central.eu/Content.Node/CONNECT2CE.html
CROSSMOBY	Interreg V-A Italy-Slovenia	09/2018 – 08/2021	https://www.ita-slo.eu/it/crossmoby
FORTIS	Interreg V-A Italy-Slovenia	02/2020 – 03/2021	Not available yet
ICARUS	Interreg V-A Italy-Croatia	01/2019 - 06/2021	https://www.italy-croatia.eu/web/icarus
CIVITAS PORTIS	Horizon 2020	09/2016 - 08/2020	https://civitas.eu/portis/

3.6 Case Study 5: The Zagreb metropolitan area case study, Croatia

3.6.1 Introduction

HŽ Passenger transport with his activities tries, as much as possible, to adapt passenger services to passenger needs. Service users expect fast, efficient, attractive and exact service.
Through PPT pilot activity, plan for implementation pilot project in cooperation with other stakeholders was formed, stakeholders were included so that realization of nominated pilot would be successful, and synergy achieved. Within this Action the Feasibility study regarding all of ADRION area, concentrating on the links in Croatian ports but involving transnational trains (Slovenia, Bosnia and Herzegovina) and transnational maritime lines Croatia-Greece was created. The intention was to explore the possibility of facilitating faster and cheaper travel for tourist by connecting ADRION countries by innovative services. There is also another possible option for passengers, stated in FS, which can save time and, hopefully, money, and still combine "green" transport modes – using railway to Croatian ports and then having a maritime transport service to Greece.
It is not to be expected for a Croatian liner shipping company to introduce new international service since now since there are only three regular from Croatia to Italy (Zadar and Split to Ancona and Dubrovnik to Bar) but it is expected to explore the possibility for tourist arrangements using railway to Croatian ports and ships from there to Greece. This should shorten the travel by land, encourage using "greener" transport (such as railway opposite of bus) and shorten travel by sea as well. Consequently, travel time and expense should decrease and environmental impact as well.
The Croatian pilot has explored the possibility of this "railway + maritime route", including travelling potential from Croatia and other surrounding countries gravitating to Adriatic Sea. It also took into consideration passengers' travel preferences and requirements, as well as objective service aspects.

3.6.2 Case study description

The pilot itself would be a Feasibility Study on Croatia-Greece railway-maritime tourist route and its drafting would involve key stakeholders such as Croatia Tourist Board with its subsidiaries in port towns of Rijeka, Zadar, Split and Dubrovnik, as well as local government and port authorities of these towns. It is considered that these institutions have insight in the issues that will be explored, as well as interest and knowledge needed for successful pilot implementation. More about the institutions in "Cooperation platform" document.
Most of tourist arrangements involving maritime transport to the southeast of Europe involve road transportation (buses) to Italian ports and then ships to Greece. This leads to the situation where individual passengers and / or group tourists from Croatia travel by bus for hours to the port of Venice, Trieste, Ancona or other to embark a cruiser/ship/ferry to Greece.
There are railway lines from Croatia and surrounding countries to Greece but due to long distance, travel time and expense (Zagreb or Ljubljana – Athens is app. 2-6 changes and 43 hours, Sarajevo – Athens is app. 3 changes and 65,5 hours) it can't be expected for travelers to use the railway. This particularly concerns tourist, who do not want to waste too much time on travel but on sightseeing.
Main purpose of this Action was to set up foundation for own, independent, reliable and automatic system for providing information regarding timetable, train punctuality and operative changes during journeys (delays, unexpected events and similar) in stations, on new trains and through other communication channels.
By traffic demand analysis the need for Feasibility study was examined, all stakeholders were identified and reachable data from rail and maritime operators in this area was analyzed. With data acquired from this research, current traffic flow was simulated and created possibilities for future traffic. Analysis has been a base for Feasibility study, which should provide information on Croatian railways with all advantages and disadvantages.

Focus of study was on examining transport service and how to improve it, how to achieve quality and more frequent railway connections at transnational level. We have analyzed existing and explored new possibilities for connecting Zagreb with seaports.
Survey of certain number of service users was conducted as a support to research for study purposes. This Action confirmed that strategic priority of city transport policy is implementation of intermodal and integrated passenger transport system in urban transport.

3.6.3 Stakeholders engagement

The Croatian National Tourist Board is the main promoter/supporter of our case study. They have participated at each Round table and gave comments on how FS should address certain aspects of tourism. Their involvement is crucial for future due to impacts that Tourist board can have with marketing measures as well as positive promotion of transport offers. **The Croatian National Tourist Board** is a national tourist organization founded with a view to promoting and creating the identity, and to enhance the reputation of, Croatian tourism. The mission also includes the planning and implementation of a common strategy and the conception of its promotion, proposal and the performance of promotional activities of mutual interest for all subjects in tourism in the country and abroad, as well as raising the overall quality of the whole range of tourist services on offer in the Republic of Croatia. Considering that the focus of the study is on tourist flows, and considering the main tasks, the role of Croatian National Tourist Board is important in planning and implementing mutual strategy and the concept of its promotion, i.e. in proposing and implementing promotional activities that are of common interest for all parties involved. Also, Croatian National Tourist Board can integrate all potential new services into promotional activities and motivate additional demand growth by common marketing strategy.
Cooperation with City of Split, which is also key actor taking into consideration how Split is major coastal city with large number of tourists during whole year. City of Split is also responsible for transport offers not just for everyday commuter but also for people coming from abroad and tourists from all over the world. Split is important node for tourists because it combines three different means of transport at one place. Possibility of transport integration is future for this part of Croatia.
Combining marketing measures, transport operators and tourist boards such as different agencies and info offices can provide on time information and necessary data for anybody coming to town whether by train, bus or ship. Also, considering that at one place you can exchange mean of transport without significant waling distances, can only facilitate your stay or simply boost you travel to go further.
Direct role of **The Ministry of the Sea, Transport and Infrastructure** is clear in the implementation of the project with respect to the scope of its activities, including law drafting, monitoring and control of law enforcement, licensing, inspection and other professional activities, planning, drafting and implementation of strategic documents and projects for transport infrastructure, development strategies recommendation, strategic infrastructure projects creation, creation of investment programs of strategic importance for Croatia and the preparation of project proposals for Government approval and implementation. From the management point of view, The Ministry of the Sea, Transport and Infrastructure deals with reconstruction, maintenance and other investments of strategic importance for Croatia development, which is financed entirely or mainly by the state, it coordinates these activities and perform investments monitoring. Government also covers financial gap between costs and revenues, which is essential for rail transport. By integrating the project into its own strategies, The Ministry of the Sea, Transport and Infrastructure would facilitate project implementation and financing, what would, besides establishing new and better services, also affect the incentives for those transport modes which are less harmful to the environment.
The **Ministry of Tourism** is the central state administration body in the Republic of Croatia, responsible for administrative and other activities which, inter alia, relate to: tourism policy of the Republic of Croatia, development strategy of Croatian tourism; tourism development and investments; development of congress, rural, hunting, health, youth and other selective forms of tourism; the promotion and development of small entrepreneurship in tourism and hospitality;

remediation programs related to the restructuring of hotels and catering companies, monitoring and participation in the privatization process; tourism information technology, promotion of Croatian tourism abroad; tourist boards system; tourist and hospitality statistics; conditions in the field of tourist and hospitality services; international cooperation related to tourism; the operation and functioning of economic system instruments and measures of economic policy in relation to the supply development, provision of tourist and hospitality services and business operations of tourist and hospitality business entities; terms and conditions for performing tourism and hospitality activities, monitoring and analysing the quality of tourist offers, tourist and hospitality services, introduction of international quality standards of accommodation and services offerings; categorization of tourist and hospitality facilities; promotion of tourist and hospitality activities.

Local and regional self-government units motivate tourism; they create, define and implement policies at local or regional level, in particular, mobility policies. They also support local projects, align them with local strategies and connect different stakeholders. Integration of project into the local strategies would facilitate its implementation, and could have multiple impact - better connectivity, more competitive economy and a cleaner environment by encouraging "greener" transport modes. It is of interest for port authorities to connect passengers and goods in maritime transport with other modes of transport. Port authorities have the knowledge and understanding of current and future passenger needs. It is necessary to include port administration in procedures in relation to passengers, operators and port infrastructure.

Table 73: Stakeholders involved in the case study

Stakeholders from which you can take LoS / name of organization	Website	Profile / why we need them – in which way can they support the case we examine
Croatian National Tourist Board	http://www.croatia.hr/ http://business.croatia.hr/en-GB/Croatian-national-tourist-board	The case concerns mostly tourists, going from or coming to Croatia. Institutions mission includes the planning and implementation of a common strategy and the conception of its promotion, proposal and the performance of promotional activities of mutual interest for all subjects in tourism in the country and abroad, as well as raising the overall quality of the whole range of tourist services on offer in the Republic of Croatia.
Port of Rijeka authority	http://www.portauthority.hr/en/Home.aspx	Port authority needs to be included concerning specifications and procedures regarding passengers, operators and port infrastructure.
Port of Zadar authority	http://www.port-authority-zadar.hr/	Port authority needs to be included concerning specifications and procedures regarding passengers, operators and port infrastructure.
Port of Split authority	http://portsplit.com/en/	Port authority needs to be included concerning specifications and procedures regarding passengers, operators and port infrastructure.
Port of Dubrovnik authority	http://portdubrovnik.hr/?lan=en	Port authority needs to be included concerning specifications and procedures regarding passengers, operators and port infrastructure.
City of Rijeka	http://www.rijeka.hr/eng	Local government fosters tourism; creates, formulates and implements politics on local level, specifically mobility. It supports local projects, aligns them with local strategies and connects stakeholders.
City of Zadar	http://www.grad-zadar.hr/	Local government fosters tourism; creates, formulates and implements politics on local level, specifically mobility. It supports local projects, aligns them with local strategies and connects stakeholders.
City of Split	http://www.split.hr/Default.aspx	Local government fosters tourism; creates, formulates and implements politics on local level, specifically mobility. It supports local projects, aligns them with local strategies and connects stakeholders.
City of Dubrovnik	http://www.dubrovnik.hr/	Local government fosters tourism; creates, formulates

		and implements politics on local level, specifically mobility. It supports local projects, aligns them with local strategies and connects stakeholders.
Ministry of Maritime Affairs, Transport and Infrastructure	http://www.mppi.hr/default.aspx?id=7397	MMATI is responsible for drafting laws, supervising and controlling law enforcement, issuing licenses, inspection and other expert activities. It also plans, drafts and implements strategic documents and project for transport infrastructure, recommends development strategy, does strategic infrastructural projects and investment programs of strategic importance for Croatia and prepares project suggestions for Government to approve and implement. From the managerial point of view, the Ministry deals with reconstruction, maintenance and other investments of strategic importance for the development of Croatia, which are completely or mostly financed by the state, coordinates these activities and supervises investments. State also covers the difference between costs and revenues, ensuring railway transport on non-profitable lines, and contracts operators.
Ministry of Tourism	http://www.mint.hr/default.aspx?id=4493	Ministry of Tourism is an important stakeholder for the future. Its participation will ensure sustainability of the pilot if the idea is feasible. MoT can insert it into strategic documents and facilitate its implementation.

3.6.4 Institutional and Political Sustainability

Main national and regional policies supporting the case studies

National strategic framework is **Transport Development Strategy *(TDS 2017)* of the Republic of Croatia for the period 2017 to 2030** and is assessing and defining the future measures (infrastructure, operation and organization) in the transport sector related to international and national transport in all transport segments independent from the funding source. The TDS (2017) provides the framework for the development of interventions and defines the interfaces to other strategies or assessments (Functional Regional Concepts-FRC, Master Plans, sectorial strategies, etc.). It considers the European strategies and requirements (TEN-T, ERTMS, TSI, environmental protection, climate protection etc. – general objectives). It is also a base for Croatian situation analysis.
Based on the analysis of the current situation and in order to address the defined general and specific objectives, a set of measures has been identified in each sector. The measures propose interventions not only related to improve the infrastructure of the different transport systems but also related to operational and organizational aspects, since isolated interventions on the infrastructure will not have a big impact on the efficiency and sustainability of the system if they are not accompanied by adequate changes in the setup of the system, and the operations are not adapted to the real demand needs.
General measure no. 11 is improvement of the public perception of the transport system in Croatia. Promoting and creating a positive image of the public transport system as a reliable, safe and environmentally friendly mean of transport is important for encouraging the demand, and consequently the investments. For better promotion, it is necessary to have complete and up to date information and knowledge of the infrastructure, possibilities and development plans.
In the road sector is very important to inform users of the current situation of the traffic and weather conditions to reduce the amount of traffic jams and accidents by offering information's on alternative routes. It is also important to inform drivers of amendments to the existing or adoption of new laws in the sector relevant for the users and to provide instant information on the motorways of the incidental situations that might require changes in the allowable speed or restrictions to the use of lanes. For that

reasons, the need to constantly revise and update the information technologies and channels is very relevant for the improvement of the sector. It is important as well to increase the involvement of the media as a crucial partner for the transmission of the information.
In the maritime transport sector, it is necessary to continuously modernize and integrate IT platform in order to ensure reliable and comprehensive data and information for all users. It is also necessary to establish network services of e-business for all users of public services, to establish a unique port information system in ports in order to improve business processes and raising the competitiveness of ports, to establish hydrographic information system, to improve services maritime meteorology, to develop ICT solutions for operation with emergencies at sea and to improve and to develop the nautical information service as public and free services of safe navigation of boats and yachts.
General measure no. 12 is reducing environmental impact of transport. Based on the environmental monitoring, negative environmental and socio-economic impacts of the transport system should be reduced by effective planning/implementation of the infrastructure and the establishment of the necessary measures of environmental protection. Mitigation of the negative impact of transport on the environment must be achieved through greater energy efficiency, in particular, the use of energy sources with low or zero emissions of hydrocarbons and reducing noise emissions and the amount of continuous pollution and waste.
To prevent pollution of the Adriatic Sea with maritime facilities and vessels it is necessary to renew and modernize the fleet cleaner, to ensure the availability of services, equipment and devices for operational activities, particularly for interventions in case of large-scale marine pollution. It should also provide the conditions for sustainable and accessible service of reception and disposal of ship generated waste and cargo residues in accordance with international and EU regulations and strengthen supervision of the Ballast Water Management on the basis of a risk assessment and in accordance with internationally agreed guidelines. Timely response to combat sea pollution is of particular importance, given that sea pollution could have far-reaching consequences.
List of existing EU strategies and policies which promote rail and intermodal transport:

- White paper of common transport
- EU Strategy for the Adriatic and Ionian Region (EUSAIR)
- EU 2020 Strategy for smart, sustainable and inclusive growth
- Trans-European Transport Networks Regulation
- Urban Mobility Action Plan and Package
- The South East European (SEE) - SEE 2020
- Directive 2008/50/EC on ambient air quality and cleaner air for Europe
- South-East Europe Cooperation Process (SEECP)
- A Roadmap for moving to a competitive low carbon economy in 2050
- European Union Strategy for Danube Region (EUSDR)
- Four rail packages

Governance scheme adopted

The only relevant stakeholder is Turistička zajednica grada Splita, hereinafter referred to as „TZ Split “due to the fact that between TZ Split and HŽPP a MoU will be signed in order to determinate the future cooperation. This Memorandum of Understanding (MoU) sets forth the terms and agreement between HŽPP and TZ Split on dissemination and promotion of the output of the survey presented in “The Feasibility Study – Defining methodology for determining passenger flows between railway node Zagreb and Adriatic coast”. Consequently, TZ Split agrees, within the meaning of this Memorandum of Understanding, (MoU) to further support integration of all aspects of transport for improving passenger mobility, to impact strategies at local and regional levels, as well as to be actively involved in the preparation of proposals for strategy development at national level. Since the focus of the study are tourist flows, taking the main tasks of regional strategy into consideration, the

role of TZ Split is significant in planning and implementation of a joint strategy and concept of its promotion resp. proposals and implementation of promotional activities of mutual interest for all entities. TZ Split could integrate all potential new services into promotional activities and impact additional demand growth by a targeted marketing strategy.
The purpose of this Memorandum of Understanding (MoU) is to continue with research activities as to the current situation, to support all aspects of cooperation and potential integration of carriers, as well as to promote integrated journey and to impact strategies of all levels. TZ Split shall seek to support efforts of HŽPP at initiating integration with other carriers and promote the City of Split and its maritime links.
The above-mentioned objective shall be achieved by undertaking a number of activities. As an indication, some of these activities are listed below:

TZ Split agrees:

- to cooperate with competent authorities in planning and implementation of strategies, which also include traffic aspects,
- to promote journey from/to the City of Split by rail and ship,
- to support local projects related to new services in traffic sector,
- to network stakeholders regarding the development of services in traffic sector,
- to integrate rail traffic projects into local strategies with a view to better connectivity, more competitive economy and cleaner environment by encouraging greener modes of transportation.

HŽPP agrees:

- to liaise with the port authority regarding procedures, which relate to passengers, train operators and port infrastructure as a step in potential integration, which will enable a more optimal traffic system in the City of Split,
- to optimize means of transport and timetable according to the possibilities and needs,
- to promote journeys by rail and the City of Split through special offers,
- to examine the possibilities of integration with maritime transport for the purpose of integration of traffic service in the City of Split,
- to impact the national Traffic strategy in the section relating to the Split region.

3.6.5 Financial Sustainability

General information on the case study's financial scheme

Table 74: Case study's general costs

Total investment required in € (approximately)	*12.300,00*	*External experts cost for creating FS.*

5.2. Case study's general costs

The public transport system has a deficit balance. It is estimated that public transport cover only 20% of the total costs. The loss of the municipal owned operators is covered by the municipality budgets. For residents of areas with a low population density, using public means of transportation should be easier, faster, more cost-effective and sustainable. Pursuant to Article 3 of Regulation (EC 1370/2007 of the European Parliament and the Council of 23.10.2007 on public rail and road passenger transport) it is necessary that the competent authority compensates the public service operators for the net

financial effect, positive or negative, on cost incurred and revenues generated in complying with the tariff obligations established through general rules in a way that prevents overcompensation. Public transport of passengers must be in balance with revenues of business firms engaged in such carriage and paying compensation from the state budget. According to Maritime Development and Integrated Maritime Policy Strategy of the Republic of Croatia for the Period from 2014 to 2020 (MDIMPSRC), coastal line passenger transport is characterized as an unprofitable business activity and therefore subsidized by budget funds in a way that the financial support is given when a shipping company cannot cover the actual costs from the income earned on a specific line.
Considering all the finding from FS HŽPP has created for the purpose of this project and for future recommendations, cost to comply with all recommendations would exceed more then 200.000 EUR in long time period, 10 years or more. None of the proposed measures nor recommendations can be achieved fast and without significant budget, therefore financial planning in advance is required and amounts are symbolic for large investments.

5.3. Expected economic resources and their duration

HŽPP as service provider cannot influence on States decisions regarding when and where will invest funds, in which project will participate and in what amount. All that HŽPP can do is to give recommendations based on research. FS study provided within the Inter-Connect projects lifetime can not give any financial aspects nor can say how much funds is needed in order to establish new service, to create new ticketing offer or something different. For that reason, expected economic resources and their duration is not possible to provide based on given inputs.

5.4. Foreseen revenues streams/internal economic resources

Due to case study development status it is not possible to collect and/or define potential revenues streams generated by the project.

Table 75: Foreseen revenues streams/internal economic resources

Revenues streams	€ (Estimation)	Description
Public transport tickets sales	Increasing in longer time period	Collaboration of two or more transport operator might help increase ticket sale due to feasible transport service or reduced price tickets.
Advertising	According to yearly investment plan of each participants. HŽPP has planning funds for all marketing activities, however, there might appear some discrepancies and company might spend more or less then planned.	By combining joint actions, better promotion can be achieved. Promotional campaigns can be useful for both sides.
Concessions to private operator(s)		Cooperation between public and private operators is possible on regional level.
External economic collaborations		
Others		

5.5. Case study's financial soundness

Because there is no unique data about passenger flows, which includes all transport modes, but only partial data from certain operators regarding Zagreb hub, the need for gathering this kind of data still remains. Collected data will have to be analyzed so that guidelines for development and optimal traffic organization could be devised. With high quality analysis of traffic flows, the whole Zagreb area (narrow and wider) could make profit – operators with optimal business results and possibility of

attracting new users on public transport; users with cheaper, faster and more reliable transport; and local government with less congestion, increased mobility and better fund allocation.
By signing contracts or MoUs regarding participation within activities, risk from failure will be distributed among all stakeholders and involved parties. Basically, contracted external stakeholder will be paid to fulfil the tasks of particular activity (FS development) and by this bare the risks of negative impacts.
By creating a Strategy within Feasibility study, the overall quality of the whole range of tourist services on offer in the Republic of Croatia will be raised. FS will support local projects and will align them with local strategies and connections of stakeholders. Also, FS plans, drafts and propose implementation of strategic documents and project for transport infrastructure, recommendation of development strategy, makes strategic infrastructural projects and investment programs of strategic importance for Croatia and prepares project suggestions for Government to approve and implement. It will ensure sustainability of the pilot try to insert it into strategic documents at national level.

3.6.6 Technical Sustainability and intermodality promotion

Enabling technologies

Current situation within HŽPP company is integrated ticketing and booking system ISPRO (ISPRO is Central ticketing system offers various channels of sales) which contains services such as:
- free standing vending machines,
- POS terminals,
- handheld devices in trains,
- web page,
- smartphone app,
- smartcard.

Case studies contributions to intermodality promotion and environmental impacts reduction

Upgrading level of service quality, make it more usable for train service customers, promote intermodal ways of transport will be just a small step forward to eco-friendly means of transport and also boosting public transport service to whole Country. Croatia as a touristic destination is aware of new trends on mobility behaviours especially in leisure activities and „greener" ways of transport. However, major transport strategies and studies are not explicit enough for Governments to take necessary steps. With project like Inter-Connect we can reach further and achieve necessary steps for authorities and show them how it can bed one.

3.6.7 Other materials and contacts

The contact of the main stakeholder working on this case study is:
- *Turistička zajednica grada Splita*
- Obala Hrv. Narodnog preporoda 9, 21000 Split
- Tel: +385 (0)21 348 600
- Fax: +385 (0)21 348 604
- **E-mail:** info@visitsplit.com
- **Web:** www.visitsplit.com

3.7 Case Study 6: The Port of Bar case study, Montenegro

3.7.1 Introduction

Considering Bar, in general, passenger transport needs integrated services that can be achieved partially through harmonizing the timetable of arrivals and departures, integrating different operators' tickets and providing real-time reliable information. In addition, Passenger terminal in Port of Bar need improvements (infrastructure improvements) to be able to accommodate medium/big Ro-Pax, passenger and cruise ships. The level of this investment is further analysed in the following context:

- Financial analysis – determination of indicators, financial effects of the project for the owner/user of project infrastructure (focus on Passenger terminal in Port of Bar and future extension of the quay in 430 m)
- Economic analysis – determination of the indicators of economic effects of the project for society in whole, i.e. economic analysis estimates the contribution of the project to the overall wellbeing of society

A main requirement for the city is to invest in port – city connectivity (being the Port of Bar a gate from/to ADRION) and this intention consists the key axis of Inter-Connect Bar case examination.

Brief case study description

In this paragraph we reported and summarized the case study's official name, briefly described the intermodal solution(s) promoted, the case study's main objectives and the public and private needs tackled.

Territorial-demographic context

According to the 2011 Census, Montenegro has a total population of 620.029, of whom about a third live in the capital city, Podgorica. This is 1,3% more than in 2003, in which the previous census was conducted. Of the total population in 2011, the smallest number of population lives in the Coastal Region, i.e. 148.683 (24,0%).

According to the available data, the population of Montenegro increased by about 63% in the period between 1948 and 1991. Population growth varies by region; the smallest increase was recorded in the Northern region of Montenegro, and the number of population in the Central and Coastal regions doubled.

The average population density is 44,9 inhabitants/km², while the highest population density was recorded in the Coastal Region (Tivat municipality, 307,64 inhabitants/km²). In the territory of Montenegro, one of the significant processes is the internal migration of the population. Thus, the Coastal and Central regions are the areas of intense immigration of residents from the northern parts of the country.

The Montenegrin coast covers an area of 2.440 km² and is one of the most densely populated areas of Montenegro. The coast is 293,5 km long with 117 beaches, with a total length of 73 km. The sea for Montenegro represents very important tourism, economic, and biological resource. The general direction of coastal extension is northwest-southeast, with some major and minor deviations.

Geographically, the Montenegrin coastline includes a narrow coastal zone that is sharply separated from the rest of Montenegro by Orjen, Lovćen, Sutorman, and Rumija. Their steep slopes and vertical sections are furrowed by serrated ridges. In the narrow zone between the lower hills along the coast and the mountains in the hinterland, complexes of lowland terrains are formed, of which the Ulcinj and Vladimir fields in the southeast stand out, the Bar, Buljarica, and Budvan fields in the central part, as well as Mrčevo and Grbaljsko field and the Sutorina bay in the area of Boka Kotorska. This relief significantly affects traffic conditions.

The Town of Bar, located on the coast of Montenegro and 75 km away from Podgorica, has 13.719 inhabitants, and the municipality has 83 settlements and 40.037 inhabitants. It is divided into twelve local communities. The Town of Bar is known for its multi-ethnicity, and its affluence is made up of the 25 nationalities that inhabit this area. Since its founding, it has been a unique synthesis of the Mediterranean and the Orient.
The Bar Municipality is located in the south of Montenegro, between the Adriatic Sea and Lake Skadar. The City itself is located at 42°6' geographic latitude and 19°6' geographic longitude, at an elevation of 4 meters. The Town of Bar has over 270 sunny days making it one of the sunniest cities in Europe. Bar is surrounded by numerous mountains. The largest is Rumija, which is at an altitude of 1.595 m. Next to it, there is on one side Sutorman whose peak is "Broad side" at an altitude of 1.185 m. On the other side is Lisinj with the highest peak "Loška" at an altitude of 1.353 m.
The fact that there are high mountains in the rear area of the City, as well as in its inland area, which significantly influences the possibilities of transport connections.

Traffic context

Maritime transport

The Port of Bar is the largest Montenegrin port. The Town of Bar represents Montenegro's connection with the world because it is a border municipality which is connected to Italy by the Adriatic Sea.
The Port of Bar is in position 42° 5'N, 19° 5' E. As the main port of the Republic of Montenegro, it is located in the southern part of the Adriatic Sea. The port area is located west of the Town of Bar. The company Port of Bar is a joint-stock company, in which the state of Montenegro holds 54% of the shares in stocks.
The Port of Bar, as practically the only cargo port in Montenegro, which performs more than 95% of maritime traffic, has capacities and development potentials (length of the operational coast, depth of the waters, connection with the railway and a large area for expansion), which gives it regional status. In addition, the Port of Bar, as a modern port, offers great opportunities for further development of combined transport and interconnection of all regions, since the necessary road-railway infrastructure is located in its hinterland.

The passenger terminal at the Port of Bar is located in the northernmost part of the port. Although officially classified as a passenger terminal, it is, in fact, a ferry terminal or Ro-Pax terminal.

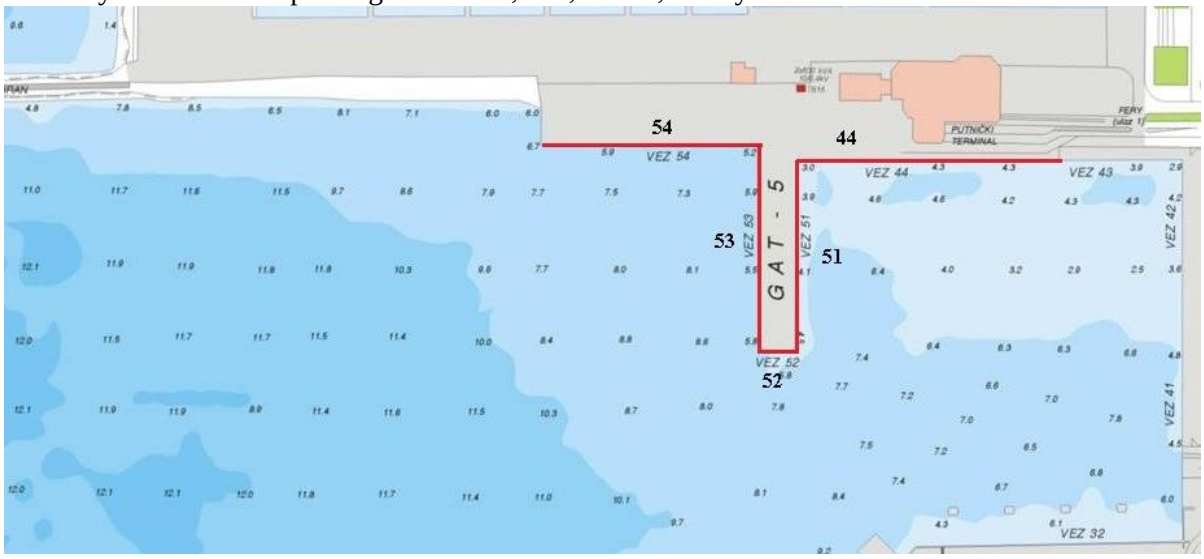


Figure 67:Arrangement of passenger terminals

The passenger terminal has a total of 430 meters of berths, arranged in five berths, which allows a connection (left or right side by side) for mooring a vessel, while berth 52 serves as a stern or bow berth, depending on the position of the boat ramp. Berths 54, 53, and 51 are most commonly used, while berth 52 is seldom used because the moored vessel at this point interferes with the unobstructed passage to the east pool of the passenger terminal, which is temporarily used as a marina.

Depth at berths varies from 4,0 to 5,9 meters, allowing mid-size ships to berth at the passenger terminal.

The passenger terminal is connected by a four-lane road (2 entrances and 2 exits) which connects it to the main road through the Town of Bar to the outside, while there is no rail link from the passenger terminal. The terminal is 400 m away from the city center, 1,6 km from the bus station and 1,9 km from the railway station.

The closest public bus stops are located from 561 to 766 m from the passenger terminal and, in this respect, there is no bus station located near the port.

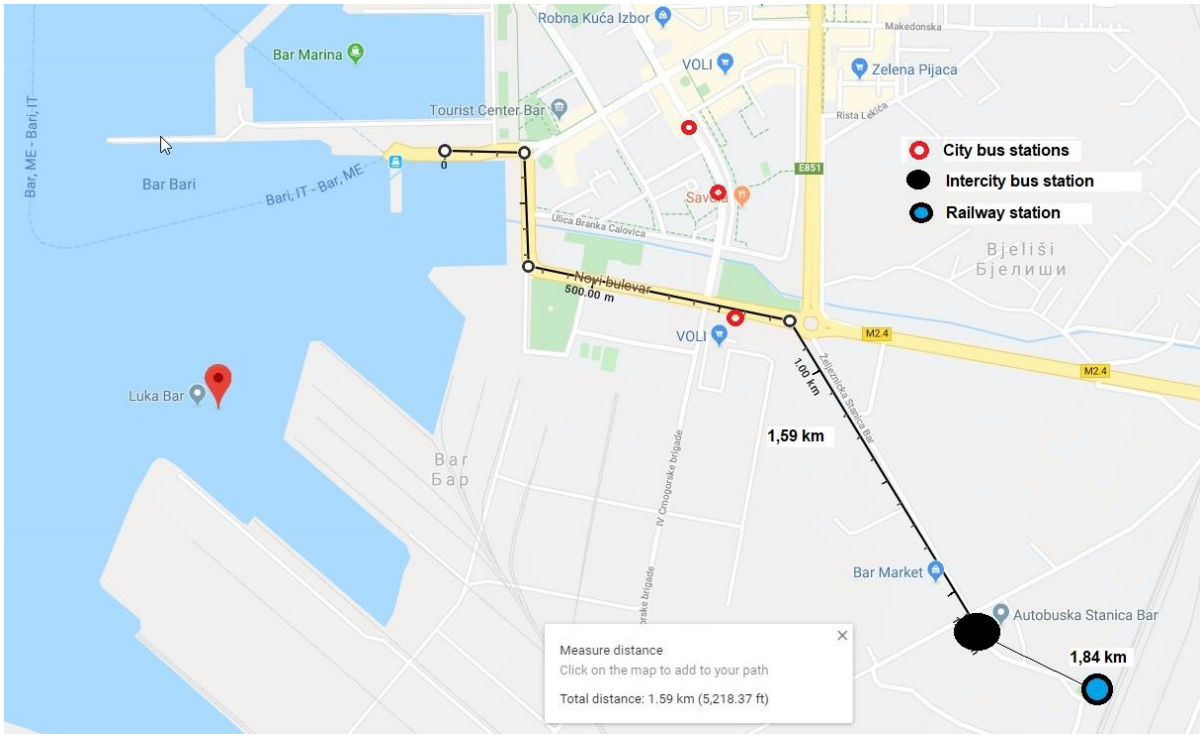


Figure 68: The location of the passenger terminal of the Port of Bar and the distance from significant points

Most of the concrete structure at berths 51-54 is damaged by armature exposed to air and seawater leading to further deterioration and therefore additional maintenance work is required.

The existing sizes and spatial arrangement of berths at the passenger terminal indicate that berths 44, 51, 53, and 54 are suitable for mooring very small cruisers up to 5,000 BT and up to 100 meters in length. At the front berth 52, the mooring of even such small cruisers would almost completely block the passage to the eastern pool of the passenger terminal, which is temporarily used as a marina, and thus, the berth 52 was not taken into account in the capacity calculation. Berths 44 and 51 with 97,5 meters long shoreline can accommodate slightly smaller vessels than berths 53 and 54 that have 107.5

meters shoreline, and could individually accommodate even a smaller proportion of cruisers falling in the category from 5.000 to 10.000 BT.

As the biggest limitation of the terminal is the low water depth with the existing operational berths, there are plans to extend the existing shore at the Passenger Terminal by 432,85 m, 30 m wide, which would allow accommodation of medium and large passenger ships (and combined cargo and passenger ships) and cruise ships.

Starting from the general goals of the development of the traffic system in Montenegro, the results of the analysis of the current situation, available spatial resources, identified strengths and opportunities, weaknesses and threats, elements of the Business Plan "Luka Bar" AD for the period 2009 - 2021, the provisions of the Spatial Plan special purposes related to the first phase of the Bar economic zone, as well as other factors of influence, "Luka Bar" AD identified that the extension of the Terminal should be fully operation in the period 2019 – 2030 according to the concession contract and investment plan related to the Port of Bar.

The project described in this case study is expected to be fully implemented and operative by 2030. at the latest with the project implementation starting by 2026 at the latest.

The passenger terminal is equipped with a modern building that provides ticketing service and a waiting room. The entrance and exit doors are located very close to the berths and provide unhindered access to and from the ships. The terminal building also houses a border and immigration police station and a customs office.

Significant competition for the Port of Bar is represented by the Port of Kotor JSC, which has been oriented towards cruise tourism since 2006 and enjoys a reputation as one of the most visited destinations in the Mediterranean. The attractive position of the port in the Bay of Boka Kotorska provides an opportunity to develop a sustainable business trend.

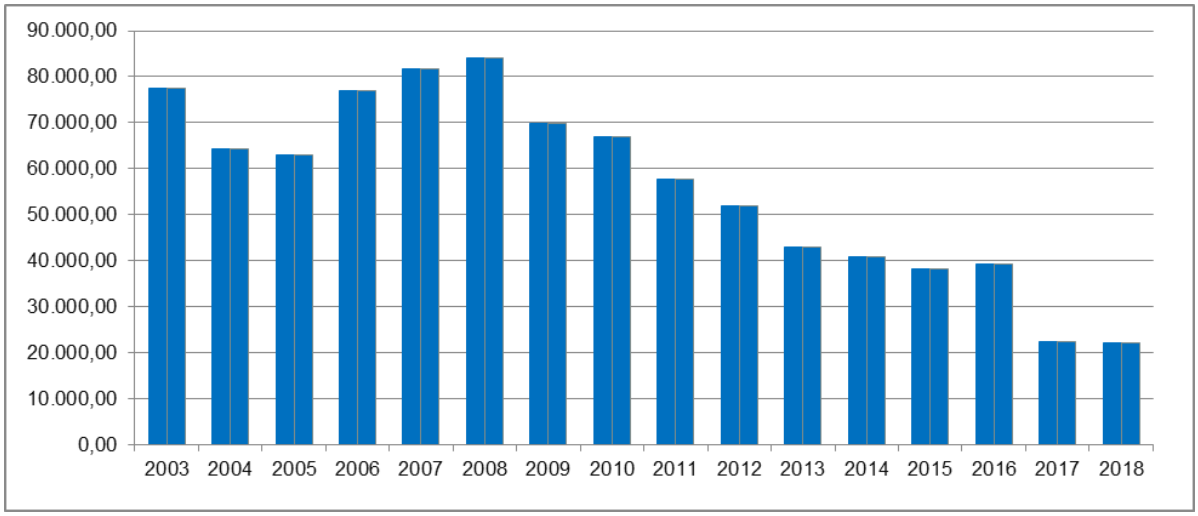
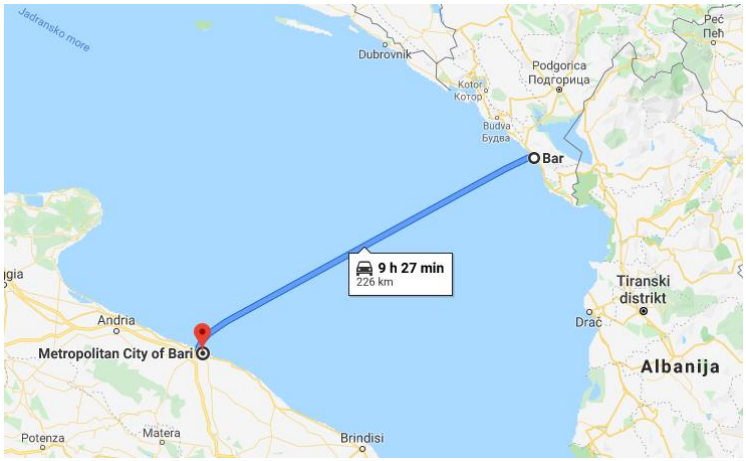


Figure 69: The location of the passenger terminal of the Port of Bar and the distance from significant points

An analysis of the movements in the number of passengers on the regular ferry lines at the Port of Bar shows that they are declining and in 2018 they are slightly above 22,000 passengers. The decline continued in 2019. Therefore, on the Bar - Bari shipping line from 21.05.2019. until 30.11.2019., 20.979 passengers, 3.670 cars, 223 vans/campers, 26 buses, 763 trucks, 8 trailers, and 417 engines

were transported. The Bar - Bari line is maintained by the ship "Dubrovnik", 122,06 m long, 18,82 m wide, 12,55 m high, and of 4,83 m freeboard. It runs at a speed of 20 knots, with a maximum capacity of 1.300 passengers and 300 cars. The ship has 148 cabins with 457 beds and 384 aircraft seats.

The company "Barska plovidba" JSC from Bar maintains the line in cooperation with the Croatian state company Jadrolinija.



The line operates seasonally and is available once a week or twice a week during the peak season. The ticket price for passengers ranges from 8 EUR to 102,5 EUR depending on the category of accommodation and season (low, high, weekend), i.e. 53 EUR to 158,5 EUR for various car categories and 130 EUR to 380 EUR for trucks.

Figure 70: Bar – Bari ferry line

Port of Adria JSC is located on the west side of Bar and is a private company that manages one part of the Port. Global Ports Holding (GPH) acquired the business rights in "Port of Adria" JSC Bar through the privatization in 2013. GPH holds 62,09% of the stock shares in "Port of Adria" JSC Bar. The Port of Adria is a multi-purpose port with an operational coast of 1,440 m in length, dedicated terminals for container ships, general cargo vessels, RO RO ships, and cruisers.

The port covers a total area of 518,790 m² with nine berths and an annual transhipment capacity of 750,000 TEU units and 6 million tons of general cargo.

Bus transportation

Main bus station in Bar is connected with intercity connections with cities in Montenegro (Podgorica, Herceg Novi, Ulcinj) and it maintains international bus connections to Bosnia and Herzegovina (Sarajevo, Mostar, Zenica), Croatia (Zagreb, Split, Karlovac), Serbia (Belgrade, Niš, Kruševac) and towards other European countries.
The bus station is operated by RJ Bus Station, municipal company Utilities Ltd. The main activities of the bus station are:

- bus ticket sales,
- reservation services,
- storage of luggage,
- securing parking space for buses and cars,
- providing passengers with timetable information,
- timetable records,
- transportation of workers for social purposes.

The main bus station is approximately 1,39 km away from the city center, which is only an 18-minute walk. The station is equipped with a toilet, coffee shop, and a parking lot, and hotels and hostels can be found near the station as well.

The train station is 220 m away from the bus station and there is a taxi stand within the station. The nearest airport is Podgorica Airport, 44,96 km from the station. The alternative airport is Tivat which is 58,08 km away.

Bus transportation services are provided by several carriers, with prices ranging from 2 EUR to Ulcinj, 4 EUR to Budva, 6,5 EUR to Kotor, 8,5 EUR to Herceg Novi, and 9,5 EUR to Podgorica. Lines to major cities in Montenegro are mostly available several times a day.

Bar is connected to Belgrade by daily nightline, and the price of a one-way ticket is 25 EUR, while the journey takes almost 11 hours.[8] Bar is also connected to the other capital cities of the former Yugoslavia with daily lines.

City bus transport in the Town of Bar is performed on several lines, the most important being the Old Town Bar - Hospital - Bar Station - Bar City - Šušanj - Sutomore - Haj Nehaj - Mišići - Čanj, connecting several places within the Bar Municipality, departing daily, at intervals 0:30 min to 1:00 h (depending on season) and is charged 0,5 to 2 EUR in one way. The route is 20,9 km long in total and has 15 bus stops.

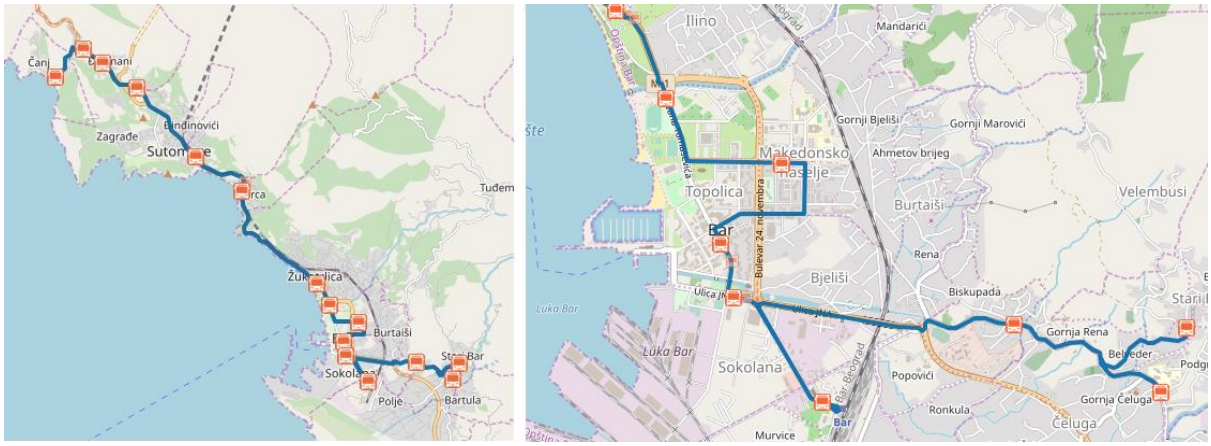


Figure 71: City bus transportation Stari Bar - Čanj

Road transportation

The main and regional roads in the area of Montenegro are in the total length of approximately 1.850 km and they are paved. The main roads (which are marked with "M") connect major cities in the country, economic centers, and border crossings, and by technical characteristics have one traffic lane for every direction (traffic lane width is at least 3 meters, with a narrow bank in most cases) and a third lane for overtaking on steep sections. Only a few sections around urban areas have two traffic lanes per direction, with or without dividers. The main highway route allows a maximum speed of 80 km/h.

Regional roads (marked with "R") connect regional centers, interflow the traffic on the main network and enable traffic connections with border crossings. The slightly lower quality of these roads imposes less speed in comparison to the main roads (up to 50 km/h).

[8] https://busticket4.me/autobuska-stanica/polasci/Bar/MNE/132/1165

Figure 72:Main and regional roads in Montenegro (marked in blue and yellow color respectively; the section of the Smokovac-Mateševo highway that is currently under construction is marked in red)

In order to properly treat the importance of each road section, in 2016, a re-categorization of roads was considered, by which some sections were upgraded to main roads, others were given a lower category, that is, they were categorized as regional roads. In addition, the connection between the capital city (Podgorica) and the coast has been improved, with the reconstruction of roads to Budva, Bar, and Cetinje and the construction of the Sozina tunnel (between Podgorica and Bar). By the construction of the tunnel, the travel time between the two cities is reduced by 30 minutes.
Asphalt pavement on the main and regional roads is in good condition, while reconstruction works are required on the mountain and peripheral sections. The network continually requires inspection as part of regular maintenance and local intervention.

Due to the relief characteristics, the routes of the basic network leading through the mountainous regions of the country are characterized by sharp bends and relatively high vertical slopes, which reduces the capacity and safety of traffic. The road geometry is often unable to respond to the demand, pertaining to the sections around Podgorica and along the Montenegrin coast. However, the overall assessment of the roads can be characterized as relatively good.

The planned highways (with geometric characteristics of higher standards) will, in the future, offer safer and more comfortable conditions for local traffic, but also enable better connection with the region and with the EU, together with creating preconditions for better utilization of economic potentials and attracting traffic flows.

In addition to the construction of new transport infrastructure, it is necessary to continuously work on the maintenance and reconstruction/restoration of the existing network of state roads.

The construction of the highway from Bar to Boljare is planned through four phases:

- Smokovac-Mateševo,

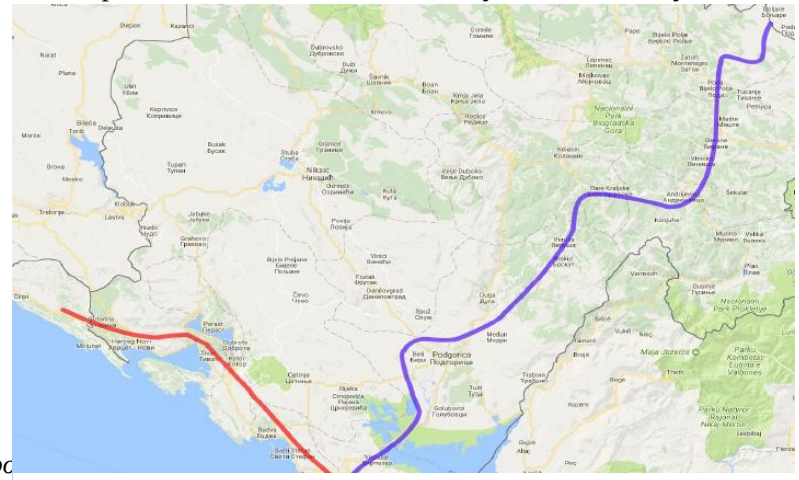


Figure 73: The Bar-Boljare highway and the coastal variant of the Adriatic-Ionian corridor - expressway along the Montenegrin coastline (marked in purple and red color respectively)

- Mateševo-Andrijevica and detour road around Podgorica (Smokovac – Tološi – Farmaci),
- Andrijevica– Boljare, and
- Podgorica – Đurmani (exit portal of the Sozina tunnel).

At the moment, construction works are performed on the Smokovac-Uvač-Mateševo section (41 km), as well as preparatory activities related to other sections.
The coastal variant of the Adriatic-Ionian corridor (SEETO Direction 1), which extends along the Montenegrin coast, aims to improve connectivity within the region, as well as between the region and the EU. The corridor is considered to be a strategic project for the region of Southeast Europe and the Balkans. Its completion will provide a high-capacity and quality corridor that connects Central Europe and northern Italy with the Ionian Peninsula via Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania, and Greece.
The Adriatic-Ionian multimodal corridor runs through Montenegro, from the border with Croatia to the border with Albania, about 108 km in length. It encompasses a system of detour roads around the coastal cities of Herceg Novi, Tivat, Budva and Bar and the crossing over the Bay of Kotor - the Veriga Bridge.
The estimated costs of the design, supervision, and construction of a complete express road is approximately EUR 1,013 billion. Due to many funding constraints, segmentation of the express road is required, as well as the phased construction of certain sub-sections, as already identified by the strategic documents. In 2008/2009, a general project and a preliminary feasibility study were developed for the complete road along the Montenegrin coast.
The total estimated costs of construction for the rest of the Bar-Boljare highway is approximately EUR 1.7 billion, while funds for the express road need to be provided at around EUR 1 billion. Total government debt for 2018 amounted to EUR 3,093 billion or 67,19% of GDP, and this comparison shows how significant investments in road infrastructure are.
Statistical data[9] collected by the Statistical Office of Montenegro, shows the following information about the passenger usage of road transport:

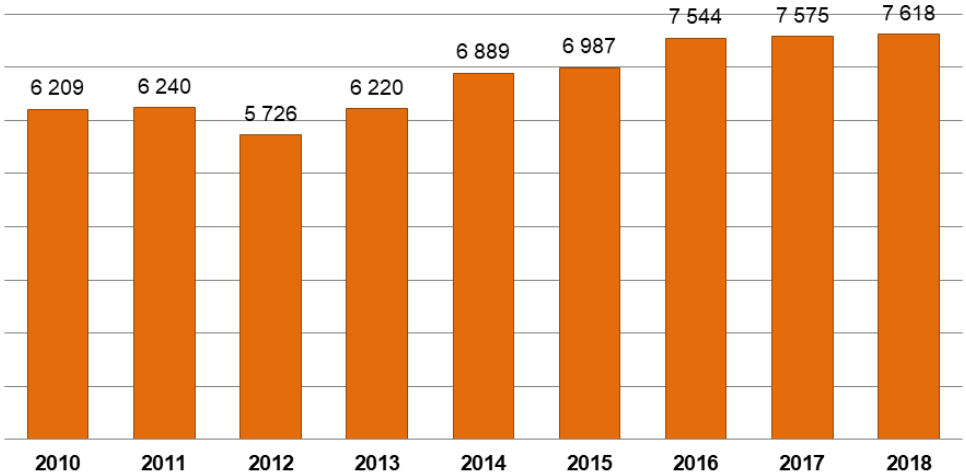


Figure 74: Passengers in road transport (in thousands)

[9] : https://www.monstat.org/eng/page.php?id=36&pageid=36

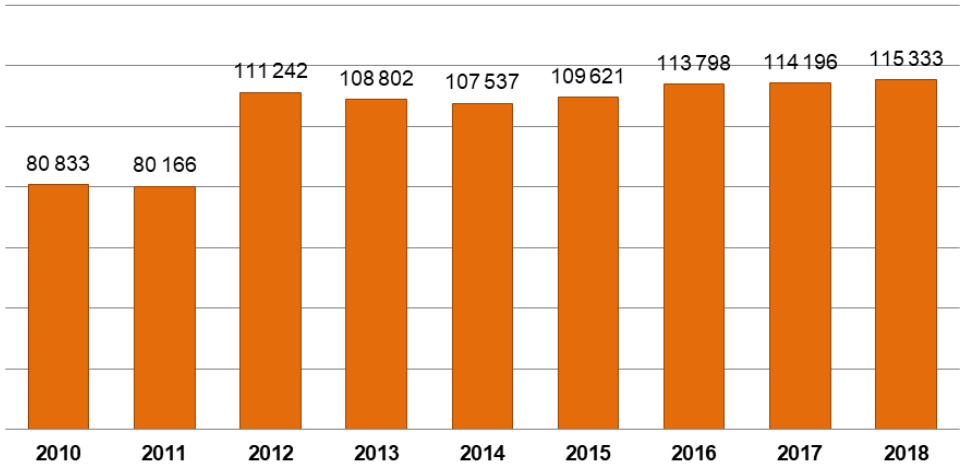


Figure 75: Passenger kilometres in road transport (in thousands)

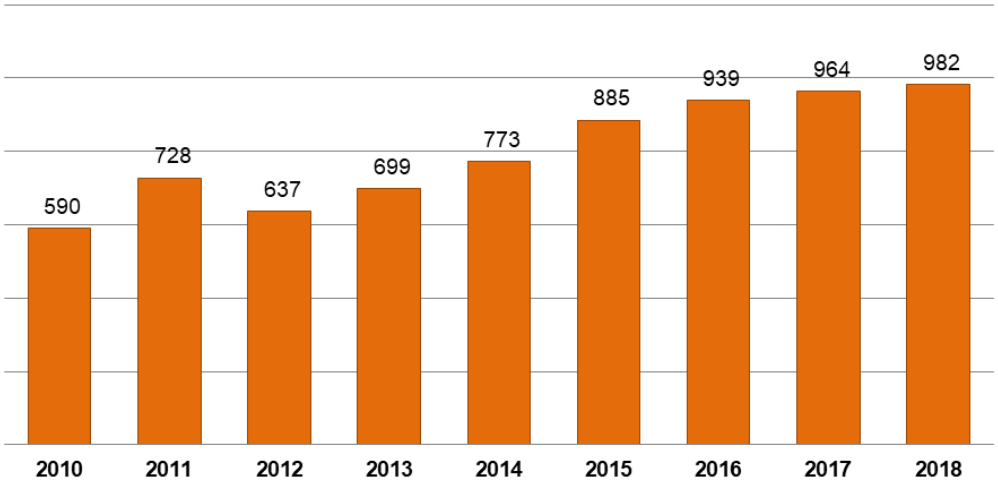


Figure 76: Passengers in local road transport (in thousands)

Rail transport

The total length of the railway network in Montenegro is 250 km. The railway is single track, category D4 with normal track width (1,435 mm). The railway network is electrified for the most part (225 km) with a permitted axle bearing of 22,5 tonnes.

Within the railway network, there are 121 tunnels with a total length of 58 km, 120 bridges, 9 galleries, and 440 culverts. The network consists of three railway tracks converging towards Podgorica, and the backbone of the system is the Bar-border railway track with the Republic of Serbia (Belgrade), which is fully electrified. The Nikšić - Podgorica railway track (56,6 km) was completely reconstructed and electrified in the period from 2006 to 2012, with the restitution of passenger traffic. Operating speed on this railway track ranges from 75 km/h to 100 km/h. The Podgorica-Skadar railway, which continues to Tirana (Albania), is used exclusively for freight, and there are plans to reconstruct the railway and establish passenger traffic between Montenegro and Albania.

Through the Bar - Belgrade railway track, Montenegro joins the TEN-T transport network, thus establishing contact with the European Union.

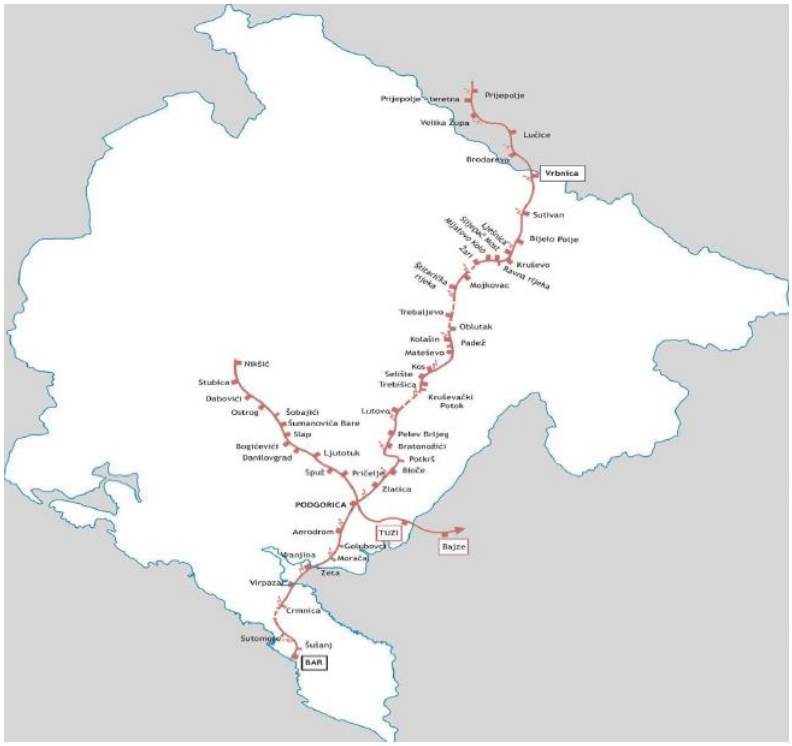


Figure 77: Railway network of Montenegro

Montenegrin railway stations do not have an adequate length of bypasses to provide conditions for freight trains of length 740 m (as prescribed by Regulation 1315/2013 for valid ERTMS operations), while the existence of only one track reduces transport and throughput capacity.

The lack of a network is also manifested in the absence of a connection with neighbouring Bosnia and Herzegovina and the absence of a passenger connection with Albania.

Montenegro is planning significant investments in the railway network and the procurement of new vehicles in the coming years to bring it into line with the standards of the TEN-T network and Intelligent Transport Systems (ITS), but they also require a large amount of financial resources.

Railway Transport of Montenegro JSC, with its headquarters in Podgorica, manages the railway traffic at a national level and is predominantly state-owned.

Table 76:Train timetables from Bar with prices, final stops, and travel time

Train	Departure		Arrival	Final stop	Second class	First-class	Type of train
430	09:00		20:02	Beograd-Topčider	21.00 €	31.80 €	inter city
432	19:00		06:12	Beograd-Topčider	21.00 €	31.80 €	express
6100	05:17		08:53	Bijelo Polje	7.20 €	10.80 €	local
6102	15:30		19:13	Bijelo Polje	7.20 €	10.80 €	local
6104	18:05		21:31	Bijelo Polje	7.20 €	10.80 €	local
6150	06:35		07:36	Podgorica	2.40 €	3.60 €	local
6152	09:25		10:22	Podgorica	2.40 €	3.60 €	local
6154	11:40		12:37	Podgorica	2.40 €	3.60 €	local
6156	14:20		15:17	Podgorica	2.40 €	3.60 €	local
6158	16:40		17:41	Podgorica	2.40 €	3.60 €	local
6160	20:40		21:38	Podgorica	2.40 €	3.60 €	local

Source: https://www.zcg-prevoz.me/search

Table 77: Timetables for trains arriving at Bar with prices, final stops, and travel time

Train	Departure	Arrival	Final stop	Second class	First-class	Type of train
Beograd - Topčider						
431	09:00	19:56	Bar	21.00 €	31.80 €	inter city
433	21:10	08:08	Bar	21.00 €	31.80 €	express
Bijelo Polje						
433	05:09	08:08	Bar	7.20 €	10.80 €	express
6101	06:41	10:19	Bar	7.20 €	10.80 €	local
6103	09:40	13:13	Bar	7.20 €	10.80 €	local
431	16:58	19:56	Bar	7.20 €	10.80 €	inter city
6105	19:41	23:14	Bar	7.20 €	10.80 €	local
Podgorica						
6151	05:14	06:11	Bar	2.40 €	3.60 €	local
433	07:12	08:08	Bar	2.40 €	3.60 €	express
6153	07:55	08:53	Bar	2.40 €	3.60 €	local
6101	09:12	10:19	Bar	2.40 €	3.60 €	local
6103	12:11	13:13	Bar	2.40 €	3.60 €	local
6155	13:00	13:58	Bar	2.40 €	3.60 €	local
6157	15:30	16:28	Bar	2.40 €	3.60 €	local
6159	16:37	17:34	Bar	2.40 €	3.60 €	local
431	19:04	19:56	Bar	2.40 €	3.60 €	inter city
6161	19:15	20:16	Bar	2.40 €	3.60 €	local
6105	22:17	23:14	Bar	2.40 €	3.60 €	local

Source: https://www.zcg-prevoz.me/search

As can be seen from the previous tables, Bar is well connected with the capital city of Montenegro on a daily basis and also has a daily line to the capital of Serbia, Belgrade.
The survey made by the Statistical Office of Montenegro[10], that collects, analyses and disseminates data on passengers carried in all transport modes shows the following statistical data on Montenegrin railway traffic

[10] https://www.monstat.org/eng/page.php?id=36&pageid=36;

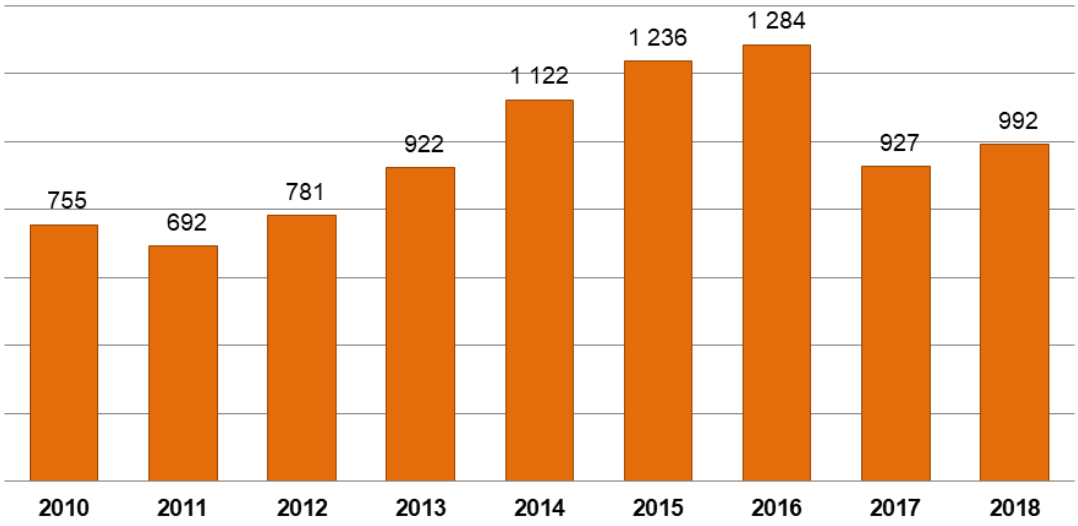


Figure 78: Passengers in railway transport per years (in thousands)

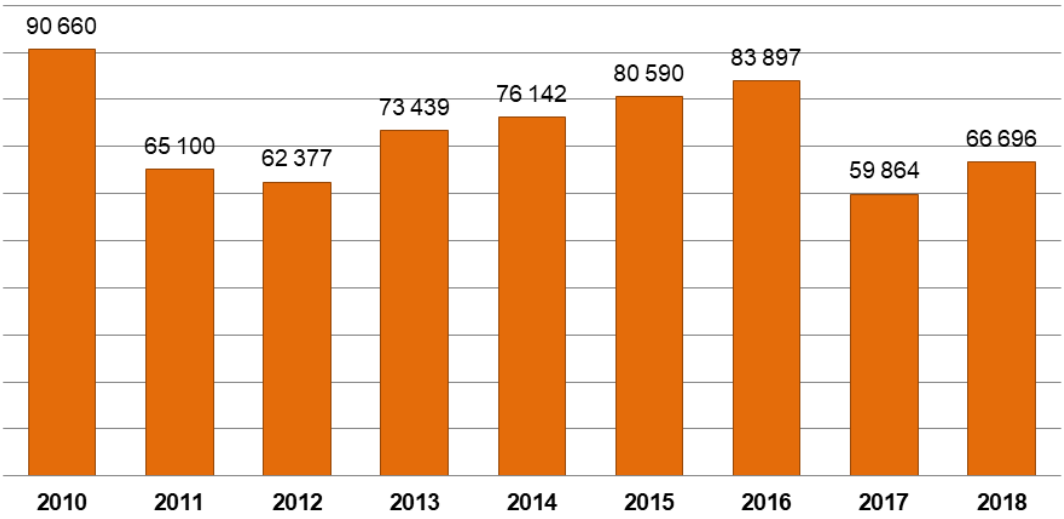


Figure 79: Passenger kilometres in railway transport (in thousands)

Air transportation

Air traffic in Montenegro is performed through two international airports (Podgorica and Tivat).

Figure 80: Podgorica Airport

Podgorica Airport (IATA: TGD, ICAO: LYPG) is located in the capital city of Montenegro and has one runway, 2.500 m long and 45 m wide, with north-south orientation (PSS 18/36). According to the ICAO airport classification, Podgorica Airport has Category 4E ILS Cat I. However, instrumental landing is only possible on PSS 36 (from the south), while the access PSS

18 from the northern direction is only visual and possible in perfect visual meteorological conditions due to the vicinity of the Dinaric Alps in the north. The airport has 14 runways, 6 parking positions for category C aircraft, with the possibility of parking category D aircraft at parking positions 5 and 6, 3 parking positions for general aviation aircraft (wingspan ≤20m), 1 parking position on the technical platform for Category C aircraft, passenger terminal 5500 m² of size, which has 8 counters for check-in and registering luggage, 8 exits (two for arrivals and 6 for departures) and 2 luggage reclaim carousels.
Tivat Airport is located in the immediate vicinity of Tivat, at a distance of 8 km (5 min) from the center of Kotor and 20 km (12 min) northwest of Budva. The airport has one runway (14/32), 2.500 m long and 45 m wide, the end of which is located only 88 m from the coastline of the Bay of Kotor. At Tivat Airport, the complete compliance with international regulations regarding the runway protection surfaces is observed.

According to the ICAO classification, Tivat Airport falls under the 4D category. Tivat Airport is characterized by challenging approach and landing procedures, due to the hilly terrain configuration around the airport location and strong crosswinds. The airport has 2 runways, 7 parking positions for aircraft (5 for category C aircraft and 2 for category D aircraft, 12 parking positions for general aviation aircraft (wingspan ≤20m), and a passenger terminal of 4.050 m², which has 12 counters for check-in and registering luggage, 6 exits and 2 luggage reclaim carousels.

Figure 81: Tivat Airport

Terminal sizes and positions at the apron are likely to limit airport capacity in the future, while runway capacity allows the aircraft to reach and even exceed 40 aircraft rotations (landing + take-off) per hour. Currently, Podgorica Airport and Tivat Airport accept on average 32-38 aircraft rotations per day.
The airports are managed by the state-owned company Airports of Montenegro JSC.
In addition to two international airports, there is an airport in Berane (Dolac), which has a runway and terminal facility (since it was once an international airport), but due to current conditions, lack of equipment and short runway length (<2.000 m), cannot be used for any purpose other than general aviation.
According to the Transport Development Strategy of Montenegro 2019-2035, the value of investments in airports in previous years is estimated at around EUR 37 million, while the total estimated required amount of investment in modernization is EUR 150 million (EUR 95 million for Podgorica Airport and EUR 55 million for Tivat Airport).
Future projects for Podgorica Airport include the expansion of the passenger terminal facility, the upgrading of manoeuvring areas and aircraft aprons, the expansion of goods transport facilities, the relocation of a fuel depot and an energy station. Podgorica Airport is not covered by the Urban Plan of Podgorica Municipality, which represents a significant impediment to further investments.
With regard to Tivat Airport, the capacity of the airport is already insufficient to meet the demand during the peak summer season, which imposes the need for expansion, above all, of the reconstruction of the existing passenger terminal facility (4.050 m²) and the construction of a new passenger terminal facility (13.000 m²), which connects to the existing one and converts part of the old terminal into a new general/VIP terminal.

The new conceptual design of the terminal platform includes the repair of manoeuvring surfaces, including the runway, the extension of the commercial aviation platform, the taxiways connecting it to

the runway, the new proposed taxiway, and associated installations, the displacement of PSS thresholds in order to comply with international safety standards and the relocation of the Tivat – Ostrvo cvijeća road.
There are also certain plans for Berane Airport, and new locations for airports in Nikšić (Kapino Polje) and Ulcinj Airport are being considered.

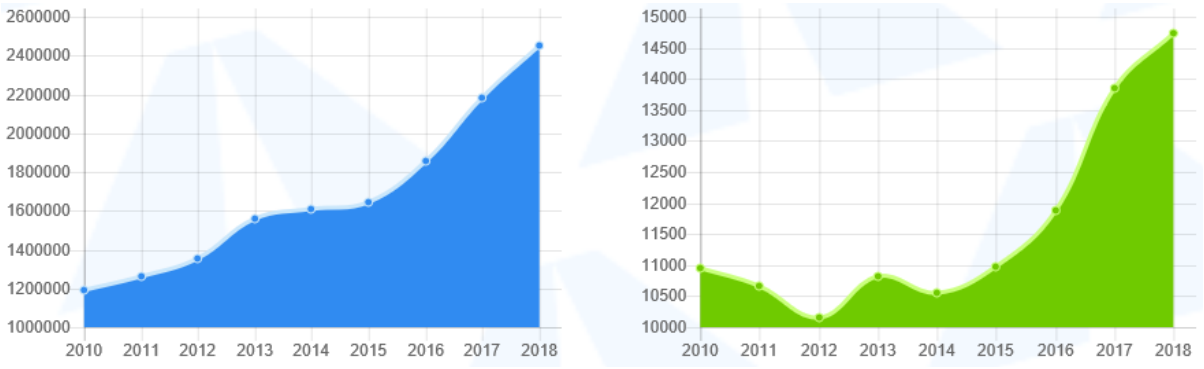


Figure 82: Annual traffic of passengers and aircraft at Montenegrin airports
Source: https://montenegroairports.com/aerodromi-crne-gore/poslovne-informacije/statisticki-podaci

A review of traffic at Montenegrin airports shows constant growth, with a total of 2.454.524 passengers, 14.731 aircraft and 14.755 rotations in 2018, and Montenegrin airports are also connected to 70 locations worldwide.

These impressive growth figures are largely due to tourism development, and the output results of the transport model in the Transport Development Strategy of Montenegro 2019-2035 show that even more significant growth can be expected in the future, which is why it is necessary to realize the aforementioned investments.

Figure 83: Destinations connected with Montenegrin airports

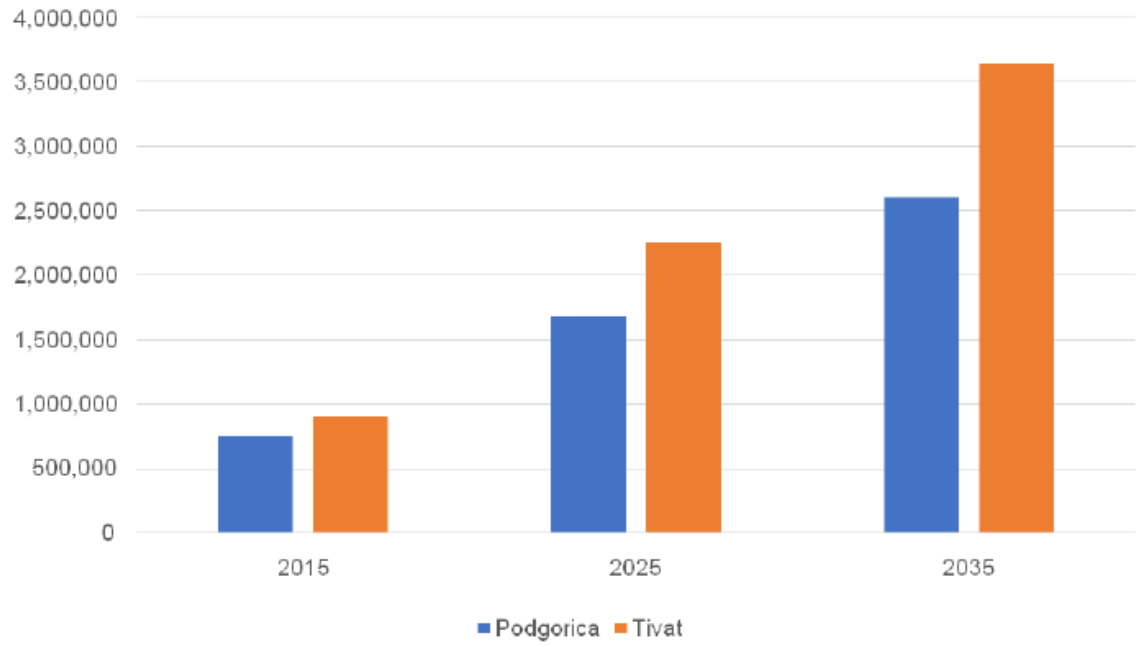


Figure 84: Estimates of annual passenger traffic at Montenegrin airports for 2015, 2025, and 2035
Source: Output results of the transport model in the Transport Development Strategy of Montenegro 2019-2035.

Bar gravitates to Podgorica Airport since it is better connected to this airport and therefore more time optimal. Podgorica Airport cooperates with numerous airlines on a regular and seasonal basis - Montenegro Airlines, Air Serbia, Ryan Air, Austrian Airlines, Alitalia, Turkish Airlines, Wizz Air, Laudamotion, LOT Polish Airlines, Aeroflot, Pobeda Airlines, and S7 Airlines. With its direct lines, Podgorica Airport connects daily with Belgrade, Istanbul and Vienna, six times a week with Ljubljana and Rome, four times a week with Warsaw, three times a week with Berlin, Frankfurt, Paris, and Zurich, and twice a week with Barcelona, Bologna, Brussels, Budapest, London, Memmingen, Milan, Stockholm, and Stuttgart. Some of the previous lines are seasonal.

Tourism in the Bar Municipality

The beginning of tourism in the area of Bar Municipality goes back to the 18th century when the Venetians ruled in these areas. However, the more significant development of modern tourism begins in the second half of the 20th century, after the construction of the Podgorica - Bar railway.
Tourists find the mentioned area particularly interesting during the summer months, but it is also necessary to point out other contents that are not closely related to the sea and coast, such as cultural or recreational (e.g. the old town, proximity to Lake Skadar, rich gastro and wine offer), which can offer quality content to interested visitors throughout the year.
The number of tourist arrivals in Bar Municipality during 2018 represented 8,7% of total arrivals and 14% of total overnight stays in Montenegro. It can be concluded that this is a destination with a respectable tourist share.

Table 78: Number of tourist arrivals in Bar Municipality during 2017 and 2018

TYPE OF TOURISTS	2017	2018	INDEX 2018
Domestic	10.828	11.413	105,4
Foreign	164.274	179.839	109,5

TOTAL	**175.102**	**191.252**	**109,2**

Source: MONSTAT 2019 (www.monstat.org)

Based on the data presented in the previous table, it can be seen that the number of arrivals in the Bar Municipality is dominated by foreign tourists, who in both years represent a share of 94% in the structure shown.
Looking at the trend of arrivals, we can notice a 9,2% increase in 2018 compared to the previous year. The biggest growth is related to the increase in the number of foreign guests, which grew by 9,5% in 2018 compared to 2017.

Table 79:Number of tourist overnight stays in Bar Municipality during 2017 and 2018

TYPE OF TOURISTS	2017		2018	INDEX 2018
Domestic	43.169		47.284	109,5
Foreign	1.630.468		1.762.734	108,1
TOTAL	**1.673.637**		**1.810.018**	**108,2**

Source: MONSTAT 2019 (www.monstat.org)

It can be seen that the number of overnight stays is not significantly different from the number of arrivals since overnight stays of foreign tourists represent a share of 97% in both observed years. The growth trend is also present in the number of overnight stays, which increased by 8% compared to 2017.

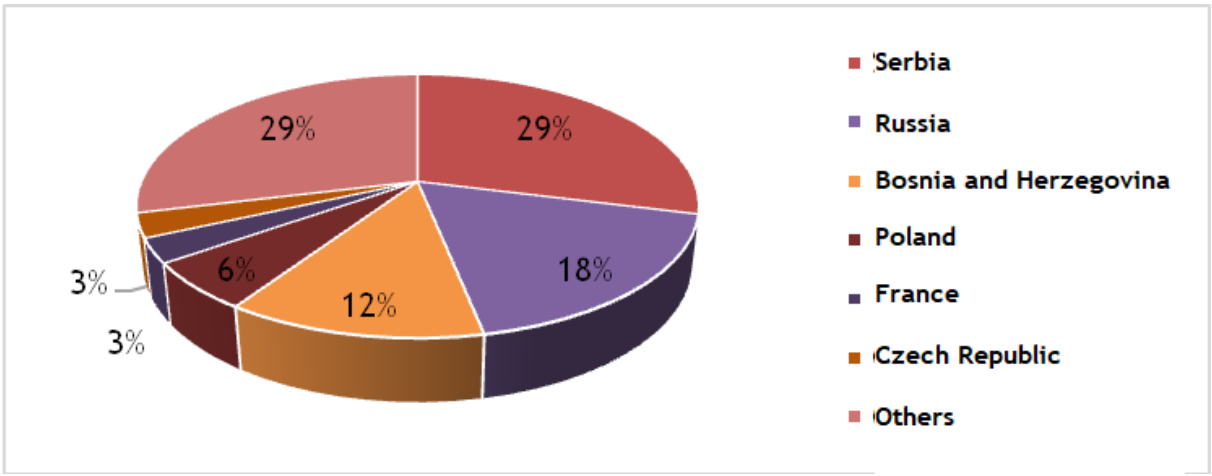


Figure 85: Share of arrivals of foreign tourists in Bar Municipality in 2018, by country of affiliation. Airport.

Source: By the author according to the annual activity report of the Tourism Organization of Town of Bar for 2018.

The previous graph shows that, during 2018, the highest number of foreign arrivals in Bar Municipality was recorded by guests from Serbia, who account for 29% of the analysed structure. A significant number of arrivals are present by visitors from Russia, with a share of 18%, Bosnia and Herzegovina, with a share of 12%, and Poland, with a share of 6%. Arrivals from other countries do not exceed the 5% share at the individual level.

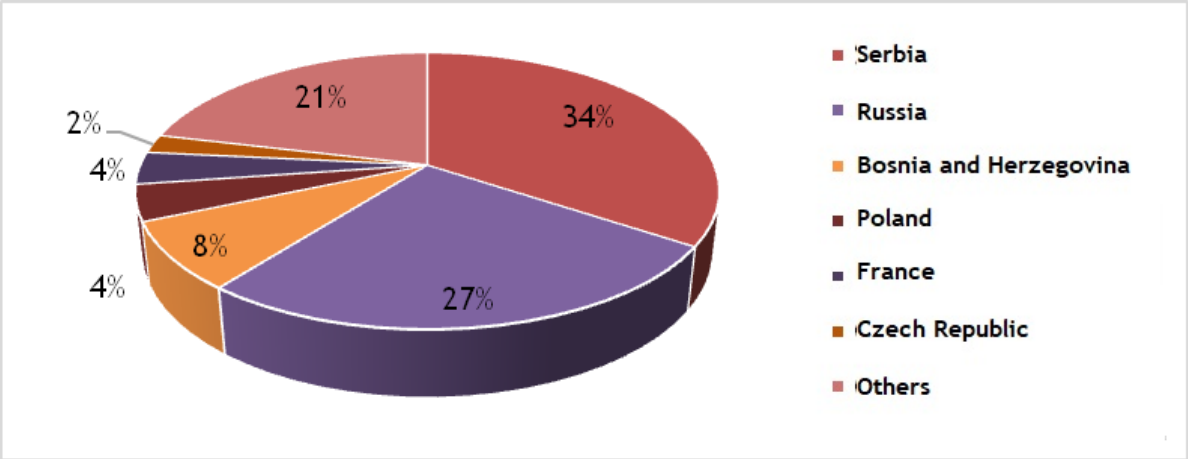


Figure 86: Share of overnight stays by foreign tourists in Bar Municipality in 2018, by country of affiliation.

Source: By the author according to the annual activity report of the Tourism Organization of Town of Bar for 2018.

Based on the number of overnight stays of foreign guests in 2018, it can be seen that overnight stays of visitors from Russia and Serbia prevail, which together account for over 60% of overnight stays in the analysed structure. Regarding the other overnight stays, the share of guests from Bosnia and Herzegovina, which account for 8% of total overnight stays, should be specially mentioned.

Table 80: Number of accommodation units in the area of Bar Municipality in 2018

ACCOMMODATION CATEGORY	NUMBER OF OBJECTS	NUMBER OF BEDS	% SHARE
Hotel	14	3.028	54,0
Garni hotel	1	20	0,4
Small hotel	13	679	12,1
Apart-hotel	4	281	5,0
Tourist resort	1	1.023	18,2
Inn	1	40	0,7
Boarding house	4	271	4,8
Holiday resorts	2	264	4,7
TOTAL	**40**	**5.606**	**100,0**

Source: MONSTAT 2019 (www.monstat.org)

The table shows that there are 40 larger accommodation units in the area of Bar Municipality, which can accommodate 5.606 guests.
Hotel capacities (hotels, Garni hotels, small hotels, and apart-hotels) dominate, which accounted for 80% of the available accommodation capacities in 2018.
Observing the number of available beds, it is also evident that hotel accommodation is dominant compared to other accommodation categories, with a share exceeding 70%.
In addition to the tourism indicators mentioned above, it is also important to point out the growing number of cruise passengers arriving at the Port of Bar since 2016.

Table 81: Number of berths for cruise ships and passengers at the Port of Bar in the period 2016-2018

CATEGORY	2016	2017	INDEX 2017	2018	INDEX 2018
SHIPS	7	9	128,6	16	177,8
PASSENGERS	8.660	10.774	124,4	22.473	208,6

Source: Port of Adria JSC Bar (2019): Port environmental review system (PERS), p. 6

From the presented data, it can be seen that an increase in the analysed years has been recorded regarding the arrival of the cruise ships at the Port of Bar. The largest increase can be noticed in 2018 when the number of ships arriving increased by 77,8% compared to the previous year.
The growth in the number of passengers arriving also does not lag behind the number of ships, which in 2018 was double the number from 2017.
No significant changes are expected in 2019 since 17 cruisers are scheduled for the year mentioned.
Although it only developed in the 1960s, which makes it one of the newer types of tourism, cruise tourism is today a globally widespread phenomenon, recording rapid growth rates with optimistic predictions for the future.
In 2018, the total number of cruise passengers was 28,5 million, dominated by travellers coming from North America, accounting for almost half of passengers and recording a global growth of 9%. The cruise industry is expected to generate more than $ 133 billion in traffic worldwide, of which Europe accounts for 38,7% of the value and is estimated to bring 403.621 jobs directly and indirectly in Europe.
The Mediterranean market is a very important segment of the cruise market, as evidenced by the fact that in cruise ports of the Mediterranean, total passenger traffic is directly related to cruise tourism amounted to 28,04 million passengers, which represents an increase of 8,2% compared to 2017 and a record number since this data have been measured.
The total number of cruise ship entries into Mediterranean ports in 2018 reached 12.700, representing an increase of 4,9% over the previous period. This growth is the result of the additional capacity that cruise companies have placed in the Mediterranean.

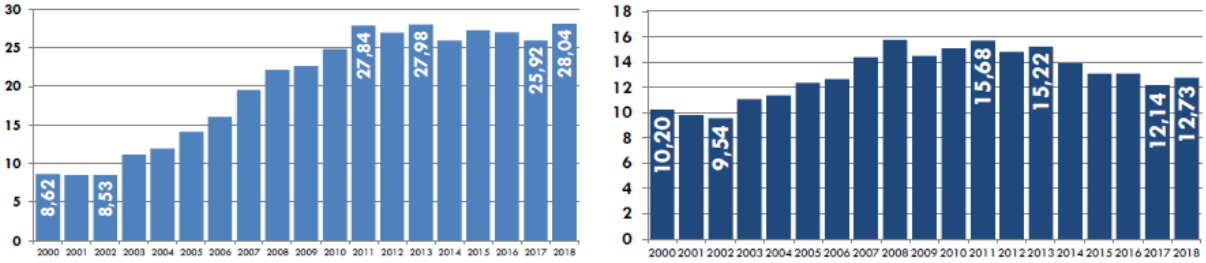


Figure 87:Movements in the number of cruise lines and passengers in Mediterranean ports (2000-2018)
Source: MedCruise Ports, Statistics report 2018

The graph below shows the real and expected increase in the number of cruise ships and berths from 2000 to 2027 when 785.000 berths and more than 470 ships are expected. Each year should set a new record for both indicators.

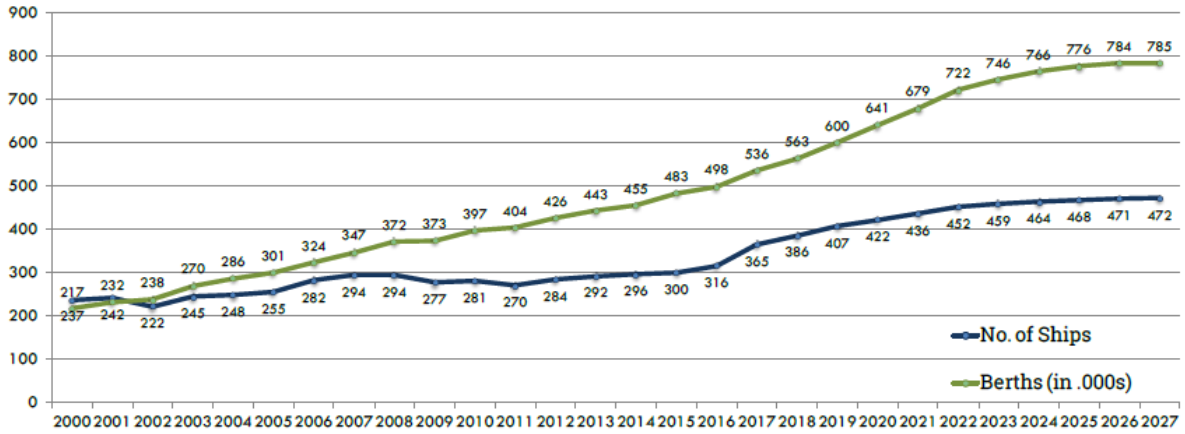


Figure 88: Movements in the number of ships and berths
Source: Cruise Industry News 2018-2019 Annual Report

The Mediterranean market is made up of four distinctive geographical regions, each with its own dynamic. These regions are the western Mediterranean, the eastern Mediterranean, the Adriatic, and the Black Sea. In the Adriatic market, in 2018 there were 2.683 ship arrivals and 4.889.351 passengers, which represents a growth of 9,95%.
The reason for the increase in the number of passengers in cruise tourism can be explained by the increasingly acceptable and affordable travel prices. Given the cheaper prices, the duration of the cruise journey is getting shorter, and therefore the demand for new ships and destinations is increasing. All of the above affects destinations that, as passenger numbers increase, have to cope with the new trends in safety regulation and environmental protection. The demand for destinations is high, so competition is increasing day by day, and port authorities are forced to constantly work on port development and improving standards and services to remain competitive.
The above figures indicate that the cruise market is still on the rise and that positive results can be expected for the Port of Bar business, although investments are needed to ensure that Port of Bar is recognized as a cruising destination in the increasingly fierce competition. Tourism generates a significant number of passengers who represent a burden for the transport system.
It should be noted that the Port of Bar is not currently a member of the MedCruise Association.

The survey made by the Tourism organization of Bar, which has been conducting the same survey[11] over the last couple of years and is usually conducted between June and September each year, shows that most of the tourist that visit Montenegro come by car or a plane.

[11] https://www.visitbar.org/16-vijesti/316-saopstenje-za-javnost-preliminarni-podaci-o-stavovima-i-potrosnji-turista-u-baru-za-jul-2019-godine

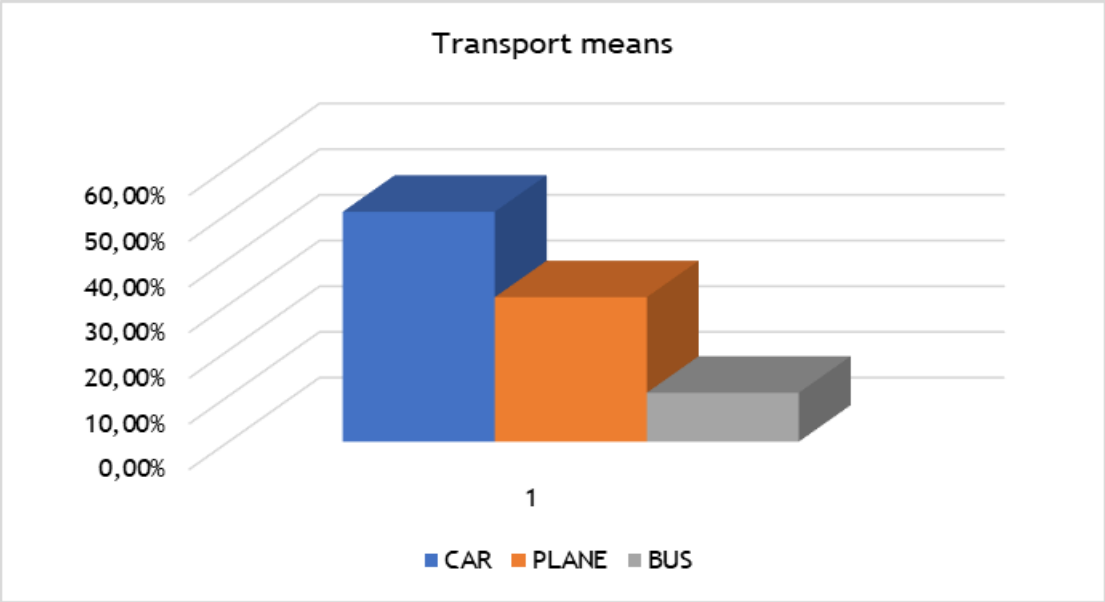


Figure 89:Transport means – tourists

Intermodality and weaknesses of the transport system

Figure 90: Strategic position of Bar in the Montenegrin transport network

The only intermodal station connecting multiple modes of transport, rail, road, and maritime transport in the Republic of Montenegro is established in the Port of Bar. Therefore, Bar represents a place of special state interest and significant development potential. However, the connections between the port docks and the rail and road networks are insufficient and there is a lack of infrastructure dedicated to establishing intermodality.

The concept of intermodality is at the very core of modern transport systems, and the essence of intermodality is to create cohesion between different transport branches and to create a single complex that will enable door-to-door transport.
The development of intermodal transport enables an increase in the volume of transport as individual transport branches are unburdened, environmental protection is improved and overall costs are reduced.
A review of timetables and lines shows that intermodality in Montenegro is not fully accessible, i.e. there are many obstacles that cause a lack of public transport users and the number of car users is increasing, which represents the predominant means of transport.

Also, a review of the availability of information shows that they are often less accessible and information channels are not available in foreign languages, there is no unique place where information can be found, the available websites are not regularly updated, and real-time information for travellers is lacking. There is no sufficient system of online ticketing and there is no possibility of combining tickets to use them for traveling by multiple modes of transport.
All previously identified weaknesses of the Montenegrin transport system show the need for changes, in order to encourage the use of public transport, which will result in numerous social and environmental benefits.
The Port of Bar has space limitations for the reception of modern passenger ships, which is why the number of passengers on ferry lines is decreasing, which is therefore unprofitable for concessionaires. Spatial constraints do not provide the opportunity for development in the cruise tourism segment as the port cannot accommodate modern ships which are prevalent in the world fleet.
As the Port of Bar currently provides only limited connections for passenger transport by ferry (with Italy), incentives should also be introduced to establish new shipping lines with other ports on the Adriatic and Ionian seas. Such incentives include attractive port fees for ferries, the establishment of passenger transport services between ferries and land transport (road and rail), and attractive arrangements regarding the tourism industry.

Options analysis

The following section describes an assessment of the basic options for achieving the Project's objectives and selecting feasible options for further analysis from a technical, financial, and economic point of view, and explains in more detail the needs that the Project meets within a specified timeframe.
The port infrastructure of the Port of Bar does not meet the technical prerequisites for the admission of modern cruise ships and passenger ships, i.e. it is only able to accommodate ships of limited length and freeboard and the port fails to attract larger-sized cruise ships and those with larger capacities, which is why it is not possible to establish new ferry lines. Thus, the investments aim to satisfy the economic, spatial-planning, and transport interests of the locals, tourists, local government, and the wider interested public, as well as to stimulate the intermodality of transport. Better infrastructure would create the preconditions for better transport connectivity, which is crucial for development.
Investments in the infrastructure must also be followed by investments in different means of informing, application support, and supporting technologies.
Comparatively, ports of similar characteristics have decided to solve the problems of insufficient equipment by investing in port infrastructure, and in recent years the Port of Bar has invested in the preparation of documentation for the implementation and completion of the investment in the form of an extension of the passenger coast.
It has been decided that the Port of Bar, the Bar Municipality, and the Ministry of Transport and Maritime Affairs will make significant efforts to create conditions that support overall development, in line with development plans at national, regional, and local levels.
Although the decision to upgrade the passenger coast within the maritime-passenger terminal at the Port of Bar was selected as the best solution, several different technical solutions were also considered, as well as the cost-effectiveness of continuing to maintain the port standard in unaltered form.

Business As Usual (BAU)

The Port of Bar would continue to use its existing capacities to accommodate ships and operate maritime-passenger transport. However, this solution cannot ensure that the project objectives are to be met because of several differences:

- The existing infrastructure is not satisfactory and is insufficient for all activities envisaged by Montenegro for its economic development;

- The current solution does not fit into local, national, and European development plans and strategies;
- The port infrastructure does not currently allow fully safe and unimpeded embarkation and disembarkation of passengers and vehicles in such a way that it does not adversely affect the functioning of the port at all port terminals;
- Passenger traffic on regular lines in the Port of Bar is decreasing, which is a consequence of the port's unreadiness to accommodate ships of larger dimensions and capacities;
- Traffic terminals of the Port of Bar form an intermodal node, that is, a place where traffic flow breaks and enables the transition from one means of transport to another. There are bus and train stations near the ship and ferry port. The current infrastructure does not allow for the fulfilment of an intermodal solution - the intersection of all types of transportation: bus, rail, maritime, and cycling, with the possibility of arranging park and ride systems, due to reduced capacity;
- Without investing, Montenegro's integration into the wider transport network is not improved and key obstacles to local economic growth are not overcome.

Do minimum

This solution includes limited minimum investment options in order to increase the standard of service provision. Certainly, the Port of Bar would benefit more from this solution than from the option of making no changes. However, this solution does not address all the questions raised in the previous paragraph and investing in one part of the project would lead to a partial increase in standard. Nevertheless, many weaknesses of these solutions are noticed, such as:

- The aforementioned interventions would not significantly increase the level of the security standard of the Port of Bar;
- A partial investment would not make a significant shift in the availability of the Port of Bar for ships of larger dimensions and capacities;
- Partial investment does not improve Montenegro's integration into the wider transport network and overcome key obstacles to local economic growth;
- The partial investment would not allow the complete solution to the problem of safe and unimpeded embarkation and disembarkation of passengers and vehicles in such a way that it would not adversely affect the functioning of the rest of the Port of Bar, which would also have a negative impact on the operation of the port itself;
- Partial investment cannot meet the recommendations of the Transport Development Strategy of Montenegro 2019-2035 and other national and local strategies;
- The solution would not enable a better intermodal solution - intersecting all types of traffic: bus, rail, maritime, and cycling with the possibility of arranging park and ride systems;
- This solution does not fit into local, national, and European development plans and strategies;
- Residents of the Bar Municipality and the Town of Bar will not recognize the efforts made to increase the standard due to the reduced ability to present the results achieved;
- Such an investment would not give a positive impetus to job creation in the area of the Town of Bar and beyond and has no direct effects on the economy.

Do something

This solution aims to increase standards while delivering positive environmental and economic effects and achieving indirect effects on the economy. When considering alternatives, experts in the relevant fields were consulted, who suggested the chosen solution as technically the best and most economically viable.
Also, the proposed solution will not have the effect of disrupting regular routes since the investment does not require their temporary suspension or transfer to an alternative location or other adverse circumstances that may result from the investment.
The intervention was analysed from the perspective of the necessary investments needed to meet the objectives of local, national and European strategies, from the perspective of the annual operating costs that the investment will entail, and the possibilities of combining it with other utility problems that could potentially be solved in the long term. There are many advantages to this solution:

- The solution enables planning of the development of the Bar Municipality and Montenegro and further economic development in the same area;
- The implementation of the investment would lead to a significant shift in the availability of the Port of Bar for ships of larger dimensions and capacities, which will have a favourable impact on the development of ship-passenger traffic;
- The solution enables the complete solution to the problem of safe and unimpeded embarkation and disembarkation of passengers and vehicles in such a way that it does not adversely affect the functioning of the urban centre, which would reduce the negative impacts on the quality of life and the environment;
- The investment meets the recommendations of the Transport Development Strategy of Montenegro 2019-2035 and other national and local strategies;
- The project improves Montenegro's integration into the wider transport network and overcomes key obstacles to national and local economic growth;
- Implementation of the project would enable the improvement of the functions of the Port of Bar;
- New infrastructure would enable the achievement of an intermodal solution - the intersection of all types of traffic: bus, rail, maritime and cycling with the possibility of arranging a park and ride system, thereby reducing congestion in the port;
- This solution fits into local, national, and European development plans and strategies;
- Increased standard contributes to the increased satisfaction among travellers and locals;
- The project respects horizontal principles - promoting equality between women and men and prohibiting discrimination, accessibility for persons with disabilities and sustainable development.
- This solution is marked by optimal economic indicators.

The key stakeholders in the project are The Port of Bar JSC and the Ministry of Transport and Maritime Affairs of the Government of Montenegro, with the support of the Government of the Republic of Montenegro, who must make a decision on the implementation of the project and provide financial resources for it.

3.7.2 Stakeholders engagement

The objective of this paragraph is to identify the most relevant case study stakeholders and analyse their main roles. In fact, it is important to understand their potential roles and positions in the case

study definition and implementation, their interests and objectives, useful to define the local action plans, paving the way to the replication of the Inter-Connect case studies.
Stakeholder involvement is generally considered a good practice, not only to have a good technical outcome of project activities but also to guarantee the durability of the project results and effectiveness of actions

The result of this mapping activity can support the identification of possible conflicts and coalitions between stakeholders, and how these may affect the action plan definition process in terms of geographical coverage, policy integration, and resource availability.

Main public and private stakeholders involved

The Ministry of Transport and Maritime Affairs of the Government of Montenegro is an institution competent for the transport sector and has comprehensive responsibility for the development, management, and coordination of the various modes of transport.

The organizational units within the Ministry of Transport and Maritime Affairs are Directorate for Railway Traffic, Directorate for Road Traffic, Directorate for State Roads; Directorate for Maritime Traffic and Inland Navigation (comprising 4 directorates: for the application of safety standards of maritime navigation; for the application of standards of protection of the sea against pollution and inland navigation; for inspection surveillance in maritime and inland waterway traffic and 2 regional units – Harbour Master Office of Bar and the Harbour Master Office of Kotor; the Directorate for Maritime Economy; Directorate for Air Traffic; the Directorate for International Cooperation and EU Funds and a number of Departments.

The scope of work of the port authority covers the tasks related to the construction, maintenance and management of ports; supervision of the use of ports, provision of port services, and other port activities.

The obligations of the Harbour Master Office Bar and Kotor relate to the implementation of administrative procedures for the registration of ships and vessels and the certification of seafarers in international navigation in accordance with the International Convention on Standards of Training, Certification, and Watchkeeping of Seafarers (STCW Convention).

Regarding the monitoring of regular passenger transport, this activity is defined by the Law on Road Traffic, in terms of regularity of line maintenance and special conditions for vehicles used in road transport. However, there is no one dedicated regulatory body for monitoring and supervision activities of public intercity bus transport. Regular timetables are prepared by the carrier and harmonized at the state level by the Chamber of Economy of Montenegro, after which the carrier is entitled to register the said timetable. "Monteput" Ltd. Podgorica was established by the Decision of the Government of the Republic of Montenegro on November 8, 2005, as a business successor of the Directorate for Construction of Highways in Podgorica and has jurisdiction over the construction of the motorway.

Other entities with specific competencies related to the overall functioning of the Montenegrin transport system are Ministry of Internal Affairs, which is responsible for traffic safety, border crossings, driver and vehicle records, protection and rescue management; Office for European Integration at the Prime Minister's Office, which is responsible for leading the EU accession process and horizontal monitoring of the use of pre-accession funds and other EU instruments available to Montenegro and part of the scope of work of the Ministry of Sustainable Development and Tourism, relating to the spatial planning, environmental protection, accessibility of Montenegro as a tourist destination, etc.

The Bar Municipality is the bearer of local development and an indispensable stakeholder of every project in the area of the Town of Bar. The Municipality sets strategic development guidelines, and one of the most important guidelines is the concept of promoting sustainable development, which is based on economic development, increasing living standards and preserving the natural, cultural, and traditional heritage. Such a development system allows defining the development needs, defining priorities, and developing ideas and projects. Private operators include companies managing infrastructure or providing transport services, the role of which has been clarified earlier in the text. The final stakeholders, the passengers, represent a very important segment as they provide feedback on the quality of services and proposed solutions.

Table 82: Stakeholders involved in the case study

Type of stakeholder	Stakeholders and a brief description	Role in the case study
Public authority/decision makers	• Ministry of Transport and Maritime Affairs of the Government of Montenegro • Ministry of Internal Affairs • Ministry of Sustainable Development and Tourism • Office for European Integration at the Prime Minister's Office • Chamber of Economy Montenegro • Bar Municipality • Tourism Organization of Town of Bar	Public administration develops strategies and promotes and encourages the implementation of plans. The public administration also ensures the financing of projects and makes the final decisions on project implementation and investment locations.
Private operators	• The Port of Bar JSC • „Barska plovidba“ JSC • Railway Transport of Montenegro JSC • Port of Adria JSC • Monteput Ltd. • Utilities Ltd. • Interlog Bar • Private bus carriers (Mediteran express, Zejdin, Blue line, Nikšić transport...)	Companies operate and manage the terminals and provide transport services
Citizen/Customs	• Citizen associations • …	
Others	• Citizens	Citizens and/or end-users of the services provide feedback on the quality of the proposed modifications in the transport system

Engagement levels

The level of stakeholders' commitment increase with the responsibility it is given to them. Higher commitments mean better results but also higher expectations from the stakeholders.
The scheme below is used to define and describe the level of commitment of each stakeholder involved in the case study.

Table 83: Level of engagement of stakeholders

Stakeholder	Level of commitment	Brief description of the commitment level
Ministry of Transport and Maritime Affairs of the Government of Montenegro	Collaborate, empower	The institution responsible for the transport sector and has overall responsibility for the development, management, and coordination of the various modes of transport and strategic planning
Ministry of Internal Affairs	Inform, consult, collaborate, empower	Responsible for traffic safety, border crossings, driver and vehicle records, protection and rescue management
Ministry of Sustainable Development and Tourism	Inform, consult, collaborate, empower	Responsible for spatial planning, environmental protection, and accessibility of Montenegro as a tourist destination
Office for European Integration at the Prime Minister's Office	Inform, consult,	Responsible for leading the process of accessing the EU and horizontal monitoring of the use of pre-accession funds and other EU instruments available to Montenegro
Chamber of Economy Montenegro	Collaborate, empower	Harmonises the prepared traffic timetables at the national level, after which the carrier is entitled to register the determined timetable
Bar Municipality	Inform, consult, collaborate, empower	Key stakeholder at the local level, involved in the accessibility of terminals and city center, as well as in promoting sustainable transport development
Tourism Organization of Town of Bar	Inform, consult, collaborate	Conducts marketing and promotional activities related to tourism in the region
The Port of Bar JSC	Inform, consult, collaborate, empower	A key stakeholder in the case study implements the investment and represents an operational authority for maritime transport
Interlog Bar	Inform, consult	Interlog Bar is acting as General agent of Maersk Line since 1999 and since that time it is acting as a logistics operator Interlog is also representative of the Grimaldi Group in Montenegro
„Barska plovidba“ JSC	Inform, consult	Operates maritime transport
Railway transport of Montenegro JSC	Inform, consult	Operates rail transport
Port of Adria JSC	Inform, consult	Operates maritime transport and has extensive experience in accepting cruise ships on round trips.
Monteput Ltd.	Inform, consult	Operates road transport and manages the largest investment in the transport system of Montenegro, Bar - Boljare highway
Utilities Ltd.	Inform, consult	Provides station services for bus transportation.
Private bus carriers (Mediteran express, Zejdin, Blue line, Nikšić transport..)	Inform, consult	Operate bus transportation
Citizens	Inform, consult	Provide feedback on analyses, alternatives, and decisions made.

Stakeholders influence-interests matrix

Table 84: Influence-interests matrix

	Low Influence	High influence
Low stake	- Private bus carriers (Mediteran express, Zejdin, Blue line, Nikšić transport...) - Utilities Ltd. - Chamber of Economy Montenegro - Port of Adria JSC - Tourism Organization of Town of Bar	- Citizens - Ministry of Internal Affairs
High stake	- Barska plovidba JSC - Railway transport of Montenegro JSC - Interlog Bar - Monteput Ltd. - Office for European Integration at the Prime Minister's Office	- The Port of Bar JSC - Bar Municipality - Ministry of Transport and Maritime Affairs of the Government of Montenegro - Ministry of Sustainable Development and Tourism

Engagement Strategies

Table 85: Engagement strategies

Engagement strategies	Do you use this strategy in your case study? (Yes/No)	Brief description of the engagement strategy used
Invitation Letters	Yes	They provide a relevant first step for informing about the initiatives and the potential involvement of the stakeholders.
Questionnaires and Surveys	Yes	The respondents were given 26 questions to answer with relation to sea-bus-rail connectivity in Bar.
Exhibitions and Road Shows	No	
Public Meetings	No	
Use of the full range of the media	Yes	The full range of media information was reviewed, primarily by searching the websites relevant to the topic of the study.
Structured interviews	Yes	Bilateral meetings and interviews with key local stakeholders were organized.
Forums	No	
Focus Groups	No	
Advisory Committee	No	
Workshop	No	
Round Table Discussions	Yes	Round table discussions were used to develop a shared vision and to jointly agree on the weaknesses and the needed future decisions.
Public-private agreement	No	
Participatory processes	Yes	Bilateral contacts (phone calls, emails) and meetings were used for updating on a specific topic important for the case study development.
Memorandum of Understanding (MoU)	No	
Others (please add)	Yes	Publicly available statistics that are relevant for the case study were collected from relevant sources.

The involvement of multiple levels of stakeholders in the planning concept aimed at integrating strategies and involving the public, in order to develop effective mobility patterns, directing them towards sustainability. Involvement and reliance on collaboration aim to address social, environmental, and economic challenges in developing local sustainable transport strategies. This means moving away from top-down decision-making towards synergistic strategic planning that takes into account the linkage of traffic to other aspects of urban life.

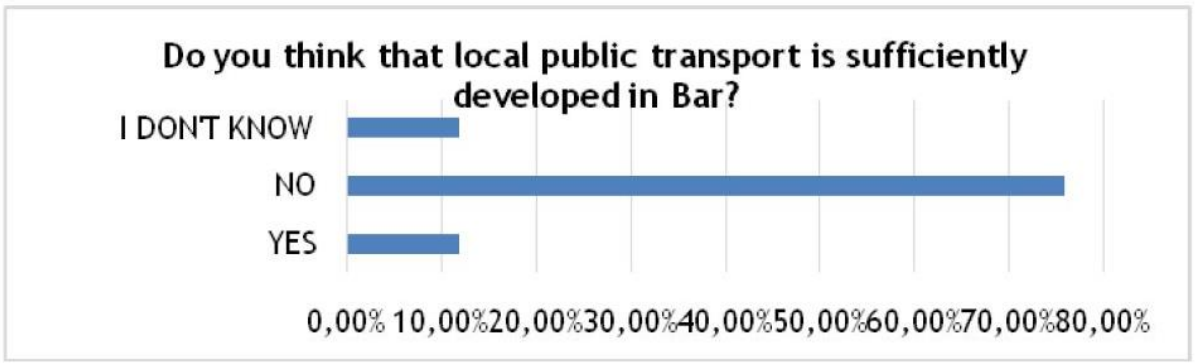
The participation of different sectors, private and public, provides a greater wealth of knowledge, experience, and insights that can better help develop a sustainable transport strategy.

The approach included discussions with stakeholders responsible for strategy-making to ensure that the case study includes as many of the strategies adopted as possible. In addition, the end-users' wishes and support to the proposed transport solutions were tested through conducting a survey by private stakeholders.

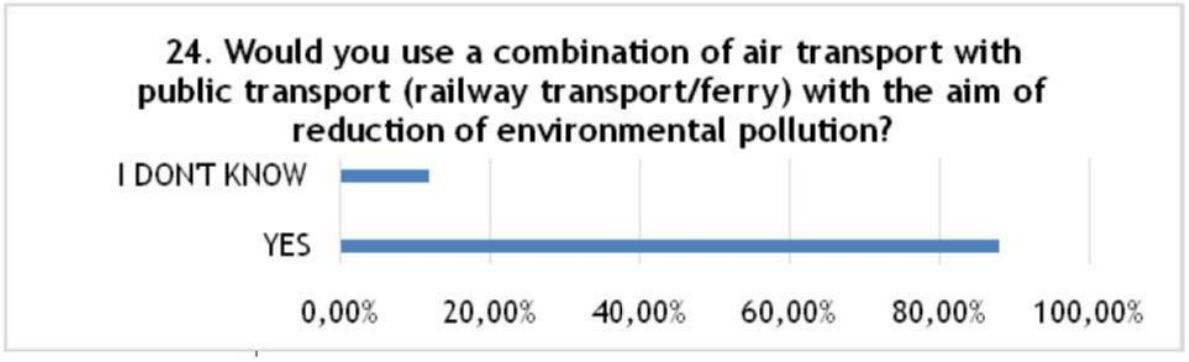
The participation of different stakeholders ensures that the mobility issue is addressed and creates a more cohesive, sustainable transport system through a holistic approach and cross-sectoral (horizontal), multi-layer (vertical), and multi-territorial cooperation. Vertical integration has ensured the alignment of local strategies with relevant strategies and priorities at regional, national, and EU levels. Horizontal integration at the local level will ensure the spatial conditions of the project through spatial planning and by securing terrain and transport links to the project, while territorial integration will ensure the participation of neighbouring urban areas and their involvement at the wider regional level.

Through the survey, considerable information was gained about sea-bus-rail connectivity in Bar. In total, the number of respondents was 25, both sexes were almost equally represented with the majority of the above 45 years of age and employed. With regard to the overall mobility of respondents, the great majority (92%) have a driving license and their own car (64%).

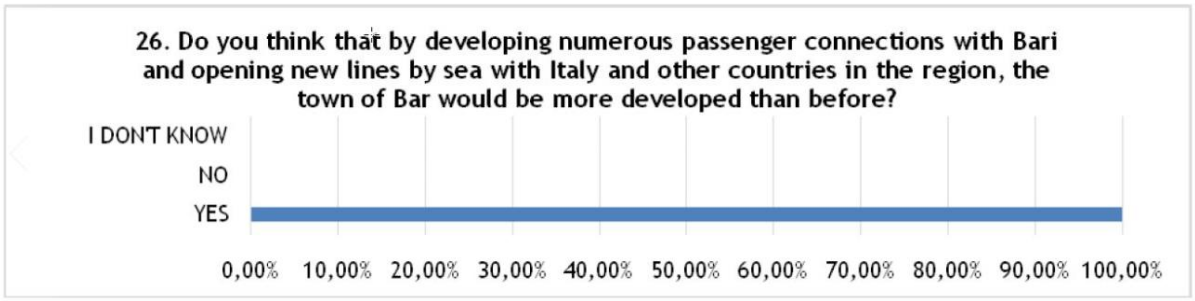
With regard to local public transport, 76% respondents said that they do not use local public transport and those who use it (24%) said that they use it for various purposes, most frequently for going out to town, going to work and returning from work, other reasons.
Local public transport is not sufficiently developed, according to the opinion of 76% of respondents. The reasons for that which were mentioned are: public transport does not cover enough territory or not enough settlements, there are no many bus lines, the busses are usually late, they are obsolete and deteriorate over time, their hygiene is not at satisfactory level, local public transport covers only city center and particular touristic locations, there is no connection between the passenger terminal and the Old town of Bar, low frequency of buses, road infrastructure is in bad condition and public transportation is not frequent enough.



52% of respondents answered that they do not think that public transport is expensive in Bar. With regard to intercity bus and rail services, the majority of respondents (68%) said that they use intercity services. Those who answered yes, usually use it for a job, excursions, shopping, visiting friends and relatives, visiting other cities, occasional travels, etc. Among the two options provided, 60% of respondents said they use rail services the most, and the rest said they use bus services.
68% of respondents think that intercity bus and rail services are not sufficiently developed: Reasons for that are: old and obsolete railway infrastructure, the low connection among cities, old, uncomfortable and old minibuses, delays and unreliability of trains, insufficient number of trains, etc. Only 48% of respondents consider that intercity bus and rail services are not expensive.
The number of those who used or are using ferry Bar-Bari is almost the same as the number of those who did not or are not – 56% travelled by ferry, while the rest did not. All respondents used railway transport by now or they are still using it.
With regard to whether there is the harmonization between different means of transport in Bar, 56% of all respondents (56%) were not sure, 36% of them said there is no harmonization between different means of transport in Bar, 8% said there is.
When given several proposals, the respondents answered as follows: for a combination of two transport means as a tourist, for the purpose of promotional travel, 88% of respondents answered that they would use it; for a combination of two transport means (railway and ferry) with the aim of reduction of environmental pollution, the answers were the same - (88%) answered that they would use it; for a combination of air transport with public transport (railway transport/ferry) with the aim of reduction of environmental pollution, 88% answered that they would use it.



All the respondents agreed they would use a single card which would include two or more means of transport. Finally, when they were asked about their thoughts about whether by developing numerous passenger connections with Bari and opening new lines by the sea with Italy and other countries in the region, the Town of Bar would be more developed than before, all respondents agreed on it that it would.



3.7.3 Institutional and Political Sustainability

Main national and regional policies supporting the case studies

Transport Development Strategy of Montenegro 2019-2035[12]

Transport Development Strategy of Montenegro 2019-2035, through one of its specific objectives - Specific objective 1.4. To improve the connectivity of the Port of Bar, it solves the problem of upgrading the port infrastructure and services that need to be improved in order to support intermodal activities and potentially attract additional passenger and freight traffic flows. The proposed measures include upgrading rail connections with the Port of Bar and extending the docks and passenger terminals at the Port of Bar. The barrier to further development of the port represents an inadequate connection with the railway network, as well as general connectivity (introduction of new highways, repair of the railway network, extension of docks and passenger terminals, etc.).

Specific objective 1.13: Improve the connectivity of the Port of Bar, also addresses the issue of the limited inefficient connection of the Port of Bar to the rail network and proposes measures such as better valorisation of certain port services and the valorisation of the Port of Bar as new cruise destinations. The diversification of port services and raising the level of port efficiency, as well as the introduction of new cruise lines, will allow new actors to emerge in this field with new operational and business plans.

Finally, the Strategy notes that since the Port of Bar currently provides only limited passenger ferry connections (with Italy), there is a need to introduce incentives to establish new shipping lines with other ports on the Adriatic and Ionian seas.

Spatial Plan of Montenegro Until 2020[13]

The Spatial Plan of the SR Montenegro Until 2000 established, for the first time, the general basis for the organization and arrangement of the territory of Montenegro as a whole. The spatial concept of long-term development of transport infrastructure was defined, which, through the envisaged improvement of Montenegro's connections with the economic space of the country (former SFRY), regional and inter-municipal connections and local accessibility, was treated as one of the key preconditions for achieving the Plan's development goals, in particular in relation to more even regional development.

The Spatial Plan of Montenegro Until 2020 gives the concept of road and railway network development, the concept of development of water transport, as well as aviation infrastructure by 2020.

Bar has been designated as a multimodal intersection and the most important port in the country.

National Strategy for Sustainable Development Until 2030 [14]

The National Strategy for Sustainable Development Until 2030 (NSSD) is a long-term development strategy of Montenegro defining sustainable management solutions with four groups of national resources: human, social, natural, and economic, as a priority of the overall sustainable development of Montenegrin society. The NSSD is an umbrella, horizontal, and long-term development strategy of Montenegro, which refers not only to the environment and economy but also to irreplaceable human resources and valuable social capital, which should enable prosperous development.

An independent, modern and efficient transport system is a prerequisite for overall economic, social, and territorial cohesion. Furthermore, in line with European sustainable urban mobility policies, cities

[12] Ministry of Transport and Maritime Affairs of Montenegro: Transport Development Strategy of Montenegro 2019-2035, Podgorica, June 2019.

[13] Ministry of Economic Development: Spatial Plan of Montenegro until 2020, Podgorica, March 2008

[14] Ministry of Sustainable Development and Tourism: National Strategy for Sustainable Development Until 2030, Podgorica, 2016, http://www.mrt.gov.me/biblioteka/strategije

need to secure a multimodal transport system and work on intermodal integrations, as a major component of any urban mobility strategy based on the principles of sustainable transport.
The Strategy states that these measures must also be a priority in Montenegro, in the context of achieving the resource efficiency objectives, as well as significantly reducing air pollution and improving the quality of life of citizens and the quality of tourist offer. First of all, the establishment of efficient public transport would significantly reduce the use of personal vehicles in cities, as well as the crowds that characterize the tourist season, especially in the coastal region. The intention is to direct the focus of transport on the railway and waterways.

Regional Development Strategy of Montenegro for the period 2014–2020[15]

The Strategy notes that the main objectives of traffic development are to increase traffic safety; integration into the European Union by connecting to TEN-T and improving the competitiveness of the domestic transport economy; improving the quality of transport services; stimulating economic growth through more efficient and cheaper transport; minimizing the negative impact of transport development on the environment. Transport infrastructure, among other things, should allow for better interconnection of all areas and regions and their connection with neighbouring countries. Based on the above, the key priorities and measures within the priorities of the "Transport Infrastructure" for the regional development of Montenegro, among others, are:

1. Development and improvement of road infrastructure,
2. Improvement and development of railway infrastructure,
3. Improvement of air traffic,
4. Improvement of water traffic, where priority is given to 4.1 Increasing the number and introduction of new shipping lines.

The Railway Development Strategy for the period 2017-2027[16]

The vision for the development of the railway is reflected in the development of a railway system that will be market-oriented, sustainable and that will support the economic development of Montenegro and integrated into the Single Europe Railway Area.

The strategic objectives defined through the Railway Development Strategy are:

1. Optimal use of infrastructure to be realized through:
   - placing users at the center of transport policy - transparency, insurance, and use of funding for railway infrastructure
   - financial sustainability and self-sustainability of railway infrastructure
   - quality and responsible maintenance of railway infrastructure and regularity of traffic
   - maximizing the development potential of the regions of Montenegro through the improvement of railway services

2. The controlled development of the railway sector will be realized through:
   - an efficient and effective system of state institutions that take care of the railway sector
   - functional and modern railway system capable of facing competition

3. The environment and integration into the European Union will be realized through:
   - preservation of the area of Montenegro from the negative effects of traffic

[15] Ministry of Economy: Regional Development Strategy of Montenegro for the period 2014-2020, Podgorica, June 2014
[16] Ministry of Transport and Maritime Affairs: The Railway Development Strategy for the period 2017-2027, Podgorica, 2017

- Montenegro's rail network will be integrated into the Trans-European Transport Network (TEN-T)

Airport Development Master Plan of Montenegro for the period 2011-2030[17]

The Airport Development Master Plan by 2030 defines the strategy for the infrastructural development of Podgorica and Tivat Airports for the period from 2011 to 2030, with the aim of improving the capacity and quality of service in relation to forecast traffic.
The Plan involves the realization of a series of development projects concerning the extension of the runway at both airports, the expansion of passenger terminal space, the expansion of platforms, the provision of new parking positions, etc.

Tourism Development Strategy of Montenegro until 2020 [18]

Tourism Development Strategy of Montenegro until 2020 states that the European potential for cruises is estimated at 2-3% of the total population and that, from an economic point of view, the nautical location benefits from port taxes, the costs of excursion organization, expenditures for smaller meals and souvenirs, as well as for all cruise related services. Of great importance is also the promotional impact that comes along with the luxury cruise ship and that affects the whole region.
What constitutes a certain burden is the fact that the most important sights are visited sporadically in this way, and when they are, plenty of crowds are created around them, gathering large numbers of people at once.
The Strategy states that two Montenegrin ports are attractive for luxury cruise ships: Kotor because of its status ascribed to it by UNESCO, its landscape and cultural values, and Bar as a starting point for daily excursions to Lake Skadar and Cetinje.
The Action Plans are aligned with the European Union accession policy in the field of development of the Trans-European Transport and Energy Networks (TEN-T and TEN-E), grounded on three bases:

- the legal basis for TEN-T, Articles 170-172 of the Treaty on the Functioning of the European Union,
- Regulation (EU) 1315/2013 related to European Union guidelines for the development of trans-European networks in the fields of transport and energy,
- Regulation (EU) 1316/2013 establishing the financial interests of the Connecting Europe Facility (CEF)

The Trans-European Transport Network (TEN-T) was established in order to facilitate the flow of goods and people between EU Member States faster and easier. The overall objective is to bring different parts of Europe geographically and economically closer through the development of railways, roads, port terminals, airports, inland ports, and traffic management systems.
The ultimate objectives of TEN-T are to create the missing links on the transport network, remove bottlenecks and eliminate the technical barriers existing between the transport networks of EU Member States, to strengthen the social, economic and territorial cohesion of the EU and to contribute to the creation of a unified European transport area. These goals will be realized through the construction of new transport infrastructure, the adoption of innovative digital technologies, the use of alternative fuels, the introduction of universal standards and the modernization and upgrading of existing infrastructure and frameworks.
What is common to all of the above strategies is that they all consider the Port of Bar to be a strategic port of national interest and they focus on the development of a transport system that they consider to be an impediment to faster economic development. Emphasis is placed on greater use of rail and alternative modes of transport in order to relieve road traffic. One of the significant measures is the improvement of the railway connections with the Port of Bar and the extension of the docks and the

[17] Ministry of Transport and Maritime Affairs: Airport Development Master Plan of Montenegro for the period 2011-2030, Podgorica, 2011
[18] Ministry of Tourism and Environment: Tourism Development Strategy of Montenegro until 2020, Podgorica, December 2010

passenger terminal at the Port of Bar, which would encourage multimodality and which is in line with the objectives of this Study, as well as part of the model of a sustainable urban mobility plan.

Governance scheme adopted

The management scheme adopted in this case study is based on the Montenegrin Transport Development Strategy 2019-2035 as the basic document defining the plan of development of the Montenegrin transport system in the forthcoming period. The approach involved fostering involvement and dialogue between stakeholders through establishing synergies and developing a comprehensive vision of the Study. This participatory approach, supported by the data collection and analysis process, leads to the final results of the Study.

3.7.4 Financial Sustainability

In this paragraph, quantitative and qualitative information on the financial sustainability of the Inter-Connect case study was collected. The aim of the financial sustainability analysis carried out in this chapter is to evaluate if the Inter-Connect case study will be supported by a strong and replicable business model.

General information on the case study's financial scheme

The financial scheme of the investment is based on the assumption that the amount of the investment is too large for the investor to carry out from its own or borrowed funds, therefore it relies on the availability of EU and central government contributions to the implementation of the project. The EU contribution is calculated in accordance with EU provisions as the discounted value of eligible investment costs decreased by the discounted net income value. Net income is the difference between operating costs and net income during the reference period.
The maximum rate of co-financing of eligible project costs is 85%. Given that the project generates revenue, the financial scheme is based on the calculation of the financial gap, that is, the amount to which the maximum project co-financing rate of 85% applies.

Case study's general costs

The construction of the extension of the coast of the passenger terminal at the Port of Bar is represented by a supporting wall-type structure made of concrete blocks. The basic structure consists of large prefabricated concrete elements stacked on top of each other, and side by side in systematic order, on a thin submarine stone embankment, forming a massive vertical wall. The geometry of each block is different for every distinctive block type. Six types of stone blocks were designed on the construction of the passenger terminal at the Port of Bar, i.e. block B1-block B6, and a discharge bolic and block guard. The concrete blocks stacked on top of each other without overlapping, so the wall acts as a series of fastened columns, which allows the realization of differential settlements along the track. The chamber space which, when the blocks are stacked side by side, is filled with stone material along with its entire height. At the end of the settlement, an altitude section is concreted, which aligns and connects the differently assembled parts of the prefabricated wall.

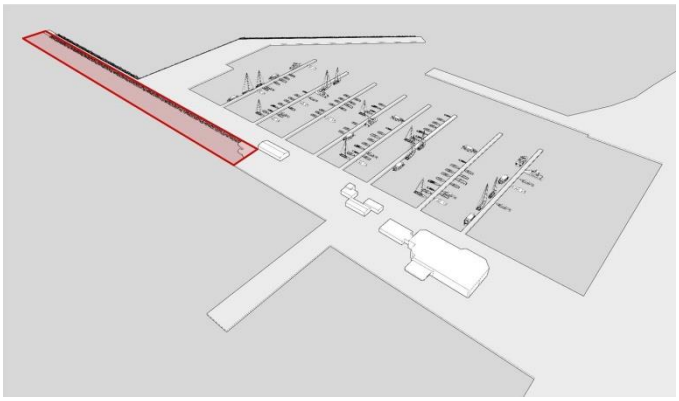


Figure 91:Passenger terminal extension

Above the concrete blocks at the top of the wall above the sea level, a reinforced concrete roof beam, 170 cm of height, was designed along the entire length of the terminal, which serves to connect the blocks into one spatial unit. Fenders and poles for mooring ships are anchored in this beam at the same time.

The connection of the transverse and longitudinal walls of the terminal was made using a 600/360 cm concrete ring block. Behind the concrete block supporting wall is a stone embankment. The upper end of the supporting structure above the sea level ends with a freestanding concrete prism of 1-20 kg over which a layer of gravel (d=30 com thickness) is placed, and over which a reinforced concrete slab of d=20 cm thickness is poured.

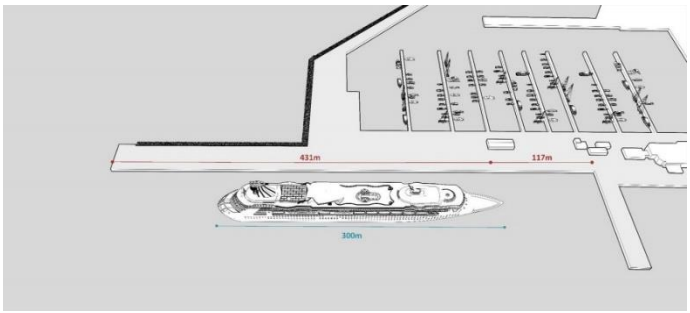


Figure 92:New passenger terminal after construction

The extension of the coast of the passenger terminal is designed for a current sea depth of 7 to 12,4 m, which could accommodate ships up to 300 m in length and 8,3 m freeboard.
The total length of the terminal is 432,85 m, 30 m of width, the width of the coastal wall in contact with the ground 5,90 m, and the end crown of +1,7 m.
The investment is being carried out on the UP2 urban parcel consisting of cadastral parcel 5735/1 KO Novi Bar under the scope of the State Location Study - part of sector 56, Bar Municipality.
The project is of capital interest for the Republic of Montenegro.

Table 86: Estimation of investment costs

Type of work	Cost
Construction works	**12.191.851,75**
Preparatory works (formation and marking of construction sites, development of exploration geomechanical works and preparation of Geomechanical study)	375.000,00
Earthwork (excavation, loading, transportation, and installation of stone material)	4.596.850,80
Concrete works (construction and installation of concrete coastal blocks, construction of ferroconcrete beams above concrete coastal blocks, concrete block fillings, construction of ferroconcrete plates, construction of ferroconcrete parapet wall)	6.268.918,48
Reinforcement works (procurement and installation of reinforcement/hooks of concrete blocks, ribbed and reticulated reinforcement)	367.592,47
Other works	583.490,00

(construction and installation of pavers, procurement, transport and installation of reverberators and polers)	
Project preparation, management, supervision	**1.097.266,66**
Design of main and execution projects, studies, permits (5% of investment)	609.592,59
Utility and water contribution (0,5% of investment)	60.959,26
Technical assistance, public procurement, visibility, feasibility study (0,5 % of investment)	60.959,26
Project management (1% of investment)	121.918,52
Professional supervision (2% of investment)	243.837,04
	13.289.118,41

Table 87: Case study's general costs

Cost	Quantification (€)	Notes
The total investment required in € (approximately)	13.289.118,41	Costs include previously specified works and services.
Foreseen investment duration (years)	3 years	The time required for the investment includes the time required for project preparation, execution of works and external evaluation.

In addition to the previously specified works and services, an estimate of the cost of plumbing and wiring, the equipment, urban equipment and finishing of the dock is required.
The prices indicated are the result of a post-market evaluation, and the actual prices depend on the results of public procurement and tendering procedures and the specifications of the equipment itself as determined by the project leader. The project also has significant costs of the project preparation, since it required the preparation of preliminary and implementation projects for construction and equipping, as well as the engagement of external associates and employees of the Port itself.

Expected economic resources and their duration

This paragraph intends to map the economic resources supporting the definition and/or the implementation of the Inter-Connect case study.

Table 88: Expected economic resources

Kind of funds	Availability and date of availability (YYYY)	State of the financing	Duration	Brief description
European funds	YES/NO (YYYY)	Foreseen request	3 years	Considering the investment position in the TEN-T network, which is one of the preconditions for co-financing projects by EU instruments, the possibility of co-financing from EU, IPA, or WBIF grants is expected.
National funds	Yes	Foreseen request	3 years	Given that the development of the Port of Bar is included in the strategic goals of the Transport Development Strategy of Montenegro 2019-2035, it is

				reasonable to expect interest expressed at the national level from the funds of the state budget for the observed investment.
Regional funds	No			Regional funds are not expected to be sufficient and available for this type of investment.
Private funds	No			Private investors are not expected to be willing to invest in the public infrastructure of this type.
Subsidies/Incentives	No			There are no subsidies and financial incentives available for this type of investment.
Internal/own economic resources	No			Given the amount of investment required and the expected direct economic benefits, it cannot be expected that the investment will be able to be financed by internal economic resources.
Others	No			Although it is not expected to finance the investment from alternative sources of funding, it should not be ruled out that national financing will be supported by funds from bond issues, government bond issues, and credit borrowing.

Montenegro's strategic orientation is to rationalize current spending in order to create the preconditions for increasing investment for the need of financing capital projects, especially with an aim to achieve more balanced regional development.

The aforementioned points to the necessity to consider and define alternative sources of funding for financing infrastructure projects (private-public partnerships, concessions, etc.) in addition to the traditional ones, such as the state budget, available EU funds, bond issues, government bond issues, and credit borrowing, while bearing in mind that the amounts specified for the capital budget are defined through the annual budget laws of Montenegro.

The principle of financial sustainability implies that the planning and implementation of strategic documents respect the fiscal constraints defined in the annual and medium-term budgetary framework. Several options are considered while choosing the direction of public policy action, and the option that guarantees greater social and economic value, with responsible respect for spending limits is usually chosen, in accordance with the law governing the budget and fiscal responsibility.

Taking into account the fact that in defining the Main Transport Network, the Western Balkan countries were guided by the guidelines and presented methodology for establishing a Main Network in the EU territory (Main Trans-European Transport Network TEN-T), with a time horizon until 2030, hence a dynamic has also been determined for the realization of the National Single List of Infrastructure Projects (SPP), which has a dominant influence on the coverage of funds when it comes to the implementation of strategic documents. Within the SPP, projects were prioritized focusing mainly on key corridors that would connect Montenegro with the region and beyond with the EU.

Placement on the TEN-T network is one of the preconditions for co-financing projects by EU instruments.

It is evident that with fiscal discipline and efforts to increase appropriations from the state budget for the development of capital projects, while reducing public spending, it will be necessary to combine different sources of financing (hybrid models-budget, loans, co-financing from EU instruments, IPA, private financing, donations) to bring about a gradual realization of projects by SPP.

Taking into account the processes of updating the SPP List (first updated in 2017; another update planned for 2019), as well as improving the maturity of projects, which are funded with a 100% WBIF grant for this type of technical assistance for the needs of SPP projects, and by preparing successive action plans for the overall implementation period of this Strategy, the possibility for more qualitative assessment of the sources of funding for projects that will be included in the group of those who will be ready to implement the construction work is available.

The justification indicators used as a basis for economic decision making (in terms of deciding whether or not to realize an investment), that are most commonly used in traffic studies are net present value, internal rate of return and cost/benefit ratio (determined for both scenarios "do nothing" and "do everything").

Given the amount of investment required and the expected direct economic benefits, it cannot be expected that the investment will be able to be financed by internal economic resources, but will need to fully secure external sources of financing for its implementation.

If the project succeeds in being included in the updated SPP List, external co-financing from EU, IPA and WBIF grants can be expected for this type of technical assistance in the amount of 85% -100% of the investment value.

Foreseen revenues streams/internal economic resources

In order to evaluate the financial soundness of the Inter-Connect case studies, it is important to monitor not only the costs but also the foreseen/possible revenue streams coming from a future implementation of the case studies' actions.

Table 89: Foreseen revenues streams/ internal economic resources

Revenues streams	€ (Estimation)	Description
Public transport tickets sales	2,4 mil. EUR in 25 years	As explained later in the text, an increase in the number of passengers in the Port of Bar is expected, resulting in direct financial benefits for the Port.
Advertising		At this stage, the potential options for generating additional income through marketing activities have not been considered.
Concessions to private operator(s)		At this stage, potential concessions to private operators have not been considered.
External economic collaborations		At this stage, income from external economic collaborations is not foreseen.
Others		

Unless otherwise agreed, the Port of Bar calculates and charges for its services in accordance with the tariff of services and fees in the international traffic of goods. The tariff for services and fees in the international traffic of goods represents a general offer for the provision of port services. Tariffs do not specifically highlight the cost of services to passengers arriving and using port services.

Port of Adria JSC, which manages the cargo area of the port, has enacted special Cruise Tariffs, which set the passenger fee at EUR 1,20 and the ISKP fee at EUR 1,0. There is a special charge for water supply, garbage collection, and entry of vehicles to the port area (car, taxi, minivan 10 EUR, minibus 20 EUR, bus 40 EUR).

The Port of Kotor JSC charges a fee of EUR 1,20 per passenger and also charges for buses and other transport to the port area. The Port of Dubrovnik charges an embarkation/disembarkation fee in international traffic of EUR 1,50, with a discount of 15% on embarking/disembarking of passengers at the beginning/end of a round trip (homeport). Therefore, the price of EUR 1,20 per passenger can be considered competitive in the local market.

Tariffs represent the direct revenue of the port, depending on the number of passengers.

In order to predict future movements in passenger traffic volumes, the analysis must be based on the availability of accurate and reliable traffic volume data and, in particular, the availability of metadata.

An important criterion is recognized, which is the structure of passengers. Other passengers (cruise passengers) are the most significant additional users of maritime passenger services. As the demand for transport services is derived and linked through the number of passengers in Montenegro, it also induces a higher demand for maritime passenger transport. Furthermore, the criterion of the need for locals to use maritime passenger transport services is recognized as a constant that is not significantly affected by macroeconomic indicators. In addition to the above, a very important criterion is the criterion of the frequency of service in maritime passenger transport.

The analysis of passenger traffic was carried out according to available official data in accordance with the stated restriction (lack of detailed, accurate, and reliable data).

Traffic projection takes into account the calculation of annual traffic growth rates in the observed sample and changes in factors that are not an integral part of the transport system, such as the population and total economic activities, with modifications related to the constraints and opportunities provided by the transport system itself, and some occurrences of the unexpected increase/decrease in traffic that do not have a characteristic of continuity are isolated.

In the analysis of traffic, the need for defining and analysing the needs of the local population and the needs of other passengers as important parameters affecting the size of traffic demand was particularly recognized as important.

Demographic changes are one of the important factors in determining the demand for passenger transport services. The demand for port services depends on the population number, age structure, mobility of the population and their needs for transport, where the travel needs of the population depend on the population number, on the demographic point of view, as well as on their general needs and lifestyle, which represent a socioeconomic factor. The assumption is that population growth will produce an equal increase in the number of passengers, i.e. demand for passenger transport services.

Demographic development at the regional level is reflected in the potential impact on infrastructure, education, industry, services, and many other areas. The forecasting of the number of passengers is based on present and future needs for movement, namely:

- traffic research so far,
- guidelines for demographic development,
- the development of economic activities and effects.

Traffic forecasts were made on the basis of passenger traffic volume data for three scenarios: conservative, realistic, and optimistic scenarios.

As can be seen from the analysis in Chapter 2, the movement of passengers on the scheduled lines shows a steady decline, to just below 21.000 in 2019, while, on the other hand, cruise passenger movement data shows a constant increase.

Population projections are one of the starting points in directing the current and shaping the strategy of future overall social and economic development. Demographic structures are one of the fundamental factors in planning the economic, educational, health, spatial, and other capacities of an area. Therefore, projecting future demographic processes and structures has quite practical reasons. As can be seen from the analyses in Chapter 2, Bar Municipality is registering population growth, and this can be expected in the future, however, at a lower growth rate than the existing ones.

For the purpose of modelling traffic demand, the assumption is that population growth will produce an equal increase in the number of passengers, i.e. the demand for maritime passenger transport services. Other factors are not expected to change, assuming that no drastic lifestyle changes or changes in the spatial distribution of the population would not occur.

The regression analysis of the macroeconomic model for estimating the demand for maritime passenger transport found a significant relationship between the demand for maritime passenger transport as a dependent variable and the number of other passengers (cruise passengers) as an independent variable.

According to data for cruise passengers, Bar, as well as the whole of Montenegro, recorded a constant increase in the number of cruise passengers in the observed period. In addition to passengers coming directly to Bar, it can be assumed that a smaller number of passengers arriving in the rest of Montenegro and the surrounding countries will use the port infrastructure, which can also have a positive effect on the traffic of the lines.

In conclusion, the lines connecting the Town of Bar are characterized by the impact of movements in the number of population and the positive impacts of total economic activities, especially tourism, which, given the current small declining trends, indicates a realistic assumption that there will be a decrease in traffic in the future, i.e. the number of passengers using regular lines. An optimistic scenario assumes a higher growth rate, while a pessimistic scenario predicts traffic stagnation.

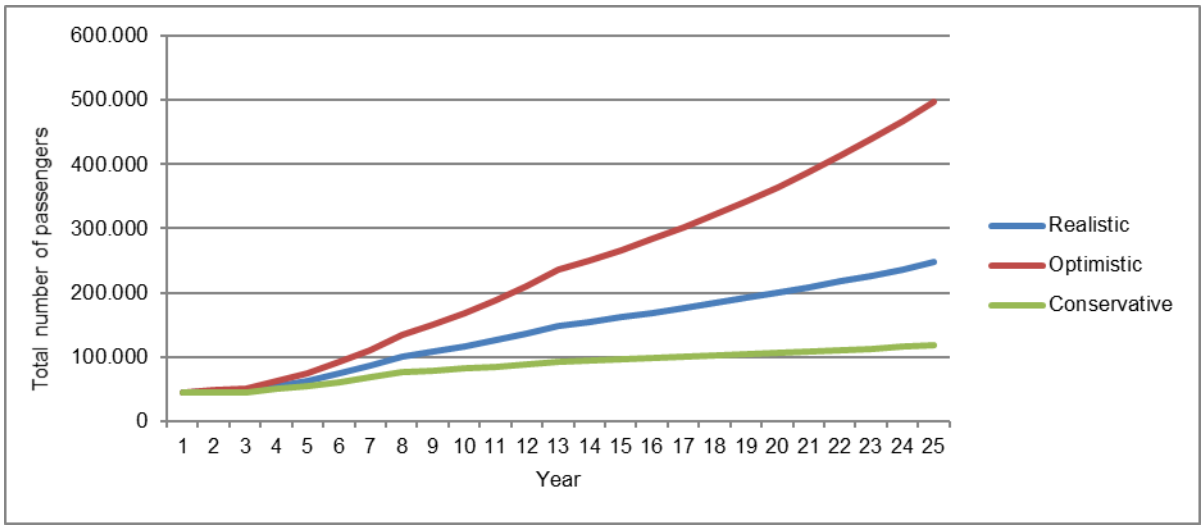


Figure 93: Forecast of the passenger traffic in the Port of Bar

Table 90: Scenarios for the movement in the number of cruise passengers and ships in the Port of Bar for a period of 25 years

Realistic	1	5	10	15	20	25
Number of cruise ships	17	27	56	82	104	133
Number of cruise passengers	23.597	37.462	78.329	114.942	146.698	187.228
Number of passengers using regular lines	20.900	26.311	38.609	46.957	53.128	60.109
Optimistic	**1**	**5**	**10**	**15**	**20**	**25**
Number of cruise ships	18	33	82	134	188	264
Number of cruise passengers	24.720	46.737	115.530	188.330	264.142	370.473
Number of passengers using regular lines	20.900	29.040	53.440	78.420	100.086	127.737
Conservative	**1**	**5**	**10**	**15**	**20**	**25**
Number of cruise ships	16	23	38	46	53	59
Number of cruise passengers	23.035	32.006	53.666	65.270	73.847	83.552
Number of passengers using regular lines	20.900	23.505	28.588	31.405	33.007	34.691

For the purposes of the Study, the results of a realistic scenario will be used hereafter.

Further financial analysis is modelled on the guidelines of the European Commission and is based on:

- Guide to Cost-Benefit Analysis of Investment Projects EC 2014-2020, 2014 version, Directorate-General for Regional and Urban policy. http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cba_guide.pdf

The envisaged implementation period of the investment is 36 months, the duration of the production period is 25 years, and the cash flow is based on growth, so that only actual income and expense flows (depreciation, provisions, cash inventories and similar accounting elements that do not correspond to actual flows were eliminated in the analysis) are taken into account. The financial discount rate has stabilized at 4,00%.

Investment costs and residual value

Investment costs include the costs of construction and equipping and the associated operating costs of implementing the project itself. A detailed breakdown of project costs by budget line is given earlier in the text.
The total investment costs are estimated at EUR 13.289.118 and are all considered eligible.
The residual value of the project is estimated based on the estimated depreciation rates, using the most accurate values possible. In determining the depreciation rates for construction works, technical equipment and installations, and intangible assets, the recommendations of experts have been used, while respecting the technical and technological standards of the duration of specific equipment.
The project's residual value at the end of the project life is HRK 1.969.185.

Table 91: Calculation of residual value

Description	Depreciation start date	Duration	Purchase value	Write-off rate	5	10	15	20	25	Residual value
Construction works	3,5th year	25	12.191.852	4%	487.674	487.674	487.674	487.674	487.674	**1.219.185**

Intangible assets (studies, analyses, projects, etc.)	4th year	20	1.097.267	5%	54.863	54.863	54.863	54.863		**0**
Reinvestment	21. godina	20	1.000.000	5%					50.000	**750.000**
Total					**542.537**	**542.537**	**542.537**	**542.537**	**537.674**	**1.969.185**

Income and expenses

Direct income after the implementation of the investment represents only the difference in the number of passengers in the scenario "with" or "without" the investment (discussed earlier in the Study) and it is estimated that in the twenty-five year period the difference would amount to 1.977.733 thousand passengers, i.e. EUR 2.373.279 new income for the Port of Bar.

However, as the new investment also brings new future costs to the Port of Bar's operating business, no significant effects are expected from the increase in these revenues. Although no additional new employment is required for the operational management of the extended coast, it is necessary to anticipate additional costs, primarily in material costs (electricity, water) estimated at EUR 10.000 per year and maintenance costs estimated at 0.3% -1.3% of the value of the investment per year, depending on the years (the older the infrastructure, the more maintenance required).

Reinvestment costs are estimated at EUR 1.000.000 after 20 years of the project implementation, and they include the expected costs of investing in certain port and urban equipment and installations.

Financial performance indicators

The financial return on investment calculates the financial results of a project by relying on two indicators: (1) the net present financial value of the project (FNPV "C") and (2) the financial internal rate of return (FRR "C"). The net present financial value of a project is defined as the sum of results after the expected investment and operating costs of the project have been subtracted from the discounted value of the projected returns. The financial rate of return is a discount value that produces a zero FNPV "C" rate.

The net present financial value of the project (FNPV "C") and the financial rate of return (FRR "C") measure the effect of the investment regardless of the sources and methods of financing.

The results of the FNPV (C) and FRR (C) calculations are explained in more detail in the table below, and the analysis results are summarized as follows:

- The net present financial value of the project: -12.807.534,90 EUR
- Financial rate of return: -13,32%.

The results show that the project is not financially profitable without additional co-financing from external sources.

Table 92: Financial return on investment

Year	Operating profit	Residual value	Total inflows	Investment costs	Operational costs	Total outflows	Net cash income (HRK)	Discount factor	Discount cash inflow (HRK)
1		0	0	3.322.280	0	3.322.280	**-3.322.280**	*1*	**-3.322.280**
2		0	0	6.644.559	0	6.644.559	**-6.644.559**	0,961538462	**-6.388.999**
3		0	0	3.322.280	0	3.322.280	**-3.322.280**	0,924556213	**-3.071.634**
4	7.420	0	7.420	0	50.532	50.532	**-43.112**	0,888996359	**-38.326**
5	16.314	0	16.314	0	50.532	50.532	**-34.218**	0,854804191	**-29.249**
6	26.957	0	26.957	0	50.532	50.532	**-23.575**	0,821927107	**-19.377**
7	39.676	0	39.676	0	50.532	50.532	**-10.856**	0,790314526	**-8.579**
8	54.862	0	54.862	0	50.532	50.532	**4.330**	0,759917813	**3.291**
9	63.110	0	63.110	0	109.668	109.668	**-46.558**	0,730690205	**-34.020**
10	72.200	0	72.200	0	109.668	109.668	**-37.469**	0,702586736	**-26.325**
11	82.213	0	82.213	0	109.668	109.668	**-27.456**	0,675564169	**-18.548**
12	93.239	0	93.239	0	109.668	109.668	**-16.430**	0,649580932	**-10.673**
13	105.377	0	105.377	0	109.668	109.668	**-4.292**	0,62459705	**-2.681**
14	111.139	0	111.139	0	156.180	156.180	**-45.042**	0,600574086	**-27.051**
15	117.201	0	117.201	0	156.180	156.180	**-38.979**	0,577475083	**-22.510**
16	123.579	0	123.579	0	156.180	156.180	**-32.601**	0,555264503	**-18.102**
17	130.290	0	130.290	0	156.180	156.180	**-25.891**	0,533908176	**-13.823**
18	137.348	0	137.348	0	156.180	156.180	**-18.832**	0,513373246	**-9.668**
19	144.774	0	144.774	0	182.759	182.759	**-37.985**	0,493628121	**-18.750**
20	152.585	0	152.585	1.000.000	182.759	1.182.759	**-1.030.174**	0,474642424	**-488.964**
21	160.800	0	160.800	0	182.759	182.759	**-21.958**	0,456386946	**-10.022**
22	169.441	0	169.441	0	182.759	182.759	**-13.317**	0,438833602	**-5.844**
23	178.529	0	178.529	0	182.759	182.759	**-4.229**	0,421955387	**-1.785**
24	188.087	0	188.087	0	182.759	182.759	**5.329**	0,405726333	**2.162**
25	198.139	1.969.185	2.167.324	0	182.759	182.759	**1.984.565**	0,390121474	**774.222**

Financial sustainability

The EU contribution for the implementation of the project has been calculated in accordance with EU provisions as the discounted value of eligible investment costs deducted by the discounted net income value. Net income is the difference between operating costs and net income during the reference period.

The maximum rate of co-financing of eligible project costs is 85,00%. Given that the project generates revenue, the financial structure is based on the calculation of the financial gap, that is, the amount to which the maximum project co-financing rate of 85,00% applies. The financial gap, in this case, is 1,001926.

The calculation of the financial gap shows that the EU should cover 85,00% of the estimated eligible costs, while the rest should be covered by the state budget, the budget of local self-government units or the funds of the project leader.

Table 93: Calculating the financial gap

		Amount (HRK)
UDEIC	Undiscounted eligible investment cost	**13.289.118,41**
DIC	Discounted eligible investment cost	**12.782.913,09**
DNR	Discounted net income	**-24.621,82**
FG_R	Financial gap	**1,001926**
	Funding sources for eligible project costs under Estimated net income	**-25.596,85**
EU grant	Calculation of (maximum) EU grant amount	**11.295.750,65**

Financial sustainability analysis is conducted to confirm that the financial resources are sufficient to cover all financial expenses from year to year, for the entire duration of the investment. Financial sustainability is valid if the net cash flow is not negative at any time during the entire economic life of the project.

Since the project does not generate significantly high revenues upon its realization, sustainability will be ensured by the Project Leader through its own activity.

Operating income is sufficient to cover operating costs with co-financing from own sources, without generating extra earnings, which means that it is not possible to predict that part of the investment will be able to cover by the projected own revenues.

For the purpose of determining the source of income for financing the project investment plan, the following is a simplified financial plan with an analysis of financial sustainability.

Table 94: Financial sustainability and simplified financial plan

Year	Own resources	National level	EU contributions	Total source of funds	Operating income	Total inflows	Investment costs	Operating costs	Total outflow	Net cash inflow (HRK)	Discount factor	Discount cash inflow	Accumulated cash inflow (HRK)
1	0	498.342	2.823.938	**3.322.280**	0	**3.322.280**	3.322.280	0	**3.322.280**	***0***	*1*	***0***	**0**
2	0	996.684	5.647.875	**6.644.559**	0	**6.644.559**	6.644.559	0	**6.644.559**	***0***	0,961538462	***0***	**0**
3	0	498.342	2.823.938	**3.322.280**	0	**3.322.280**	3.322.280	0	**3.322.280**	***0***	0,924556213	***0***	**0**
4	43.112	0	0	**43.112**	7.420	**50.532**	0	50.532	**50.532**	***0***	0,888996359	***0***	**0**
5	34.218	0	0	**34.218**	16.314	**50.532**	0	50.532	**50.532**	***0***	0,854804191	***0***	**0**
6	23.575	0	0	**23.575**	26.957	**50.532**	0	50.532	**50.532**	***0***	0,821927107	***0***	**0**
7	10.856	0	0	**10.856**	39.676	**50.532**	0	50.532	**50.532**	***0***	0,790314526	***0***	**0**
8	0	0	0	**0**	54.862	**54.862**	0	50.532	**50.532**	***4.330***	0,759917813	***3.291***	**4.330**
9	42.228	0	0	**42.228**	63.110	**105.338**	0	109.668	**109.668**	***-4.330***	0,730690205	***-3.164***	**0**
10	37.469	0	0	**37.469**	72.200	**109.668**	0	109.668	**109.668**	***0***	0,702586736	***0***	**0**
11	27.456	0	0	**27.456**	82.213	**109.668**	0	109.668	**109.668**	***0***	0,675564169	***0***	**0**
12	16.430	0	0	**16.430**	93.239	**109.668**	0	109.668	**109.668**	***0***	0,649580932	***0***	**0**
13	4.292	0	0	**4.292**	105.377	**109.668**	0	109.668	**109.668**	***0***	0,62459705	***0***	**0**
14	45.042	0	0	**45.042**	111.139	**156.180**	0	156.180	**156.180**	***0***	0,600574086	***0***	**0**
15	38.979	0	0	**38.979**	117.201	**156.180**	0	156.180	**156.180**	***0***	0,577475083	***0***	**0**
16	32.601	0	0	**32.601**	123.579	**156.180**	0	156.180	**156.180**	***0***	0,555264503	***0***	**0**
17	25.891	0	0	**25.891**	130.290	**156.180**	0	156.180	**156.180**	***0***	0,533908176	***0***	**0**
18	18.832	0	0	**18.832**	137.348	**156.180**	0	156.180	**156.180**	***0***	0,513373246	***0***	**0**
19	37.985	0	0	**37.985**	144.774	**182.759**	0	182.759	**182.759**	***0***	0,493628121	***0***	**0**
20	30.174	1.000.000	0	**1.030.174**	152.585	**1.182.759**	1.000.000	182.759	**1.182.759**	***0***	0,474642424	***0***	**0**
21	21.958	0	0	**21.958**	160.800	**182.759**	0	182.759	**182.759**	***0***	0,456386946	***0***	**0**
22	13.317	0	0	**13.317**	169.441	**182.759**	0	182.759	**182.759**	***0***	0,438833602	***0***	**0**
23	4.229	0	0	**4.229**	178.529	**182.759**	0	182.759	**182.759**	***0***	0,421955387	***0***	**0**
24	0	0	0	**0**	188.087	**188.087**	0	182.759	**182.759**	***5.329***	0,405726333	***2.162***	**5.329**
25	0	0	0	**0**	198.139	**198.139**	0	182.759	**182.759**	***15.380***	0,390121474	***6.000***	**20.709**

However, given that project contributions are only a small aspect of profit, profit analysis should reflect the socio-economic sustainability of the project. The economic analysis assesses the project's contribution to the general social well-being, not just the project's contribution to the owner and infrastructure manager.

- **Impact on depopulation and emigration**

One of the main causes of population emigration is traffic isolation, which, due to its lack of content, has the greatest impact on the emigration of the younger population, who are leaving their homes for the need for education and employment in the professions that are not represented. Greater emigration prevents total economic activities, which in the coastal area is a significant source of income for the local population.

Preventing and reversing the trend of depopulation and emigration can only be achieved by securing new jobs or quick and inexpensive transport links to jobs, education, health services, etc.

The goal of investments in transport infrastructure is to achieve the above, i.e. to enable the population to be more mobile.

- **Economic development and job vacancies**

Thanks to the implementation of the project, a certain contribution can be expected in new employment for both the construction of the facility itself and the accompanying infrastructure, as well as for the needs of service activities when commissioning the terminal's extended shoreline, which will generally be available to locals and travellers in the long term.

The project will also provide additional employment opportunities for the population of the Town of Bar and create new entrepreneurial opportunities.

- **Financial position and standard of living of the local population**

Travel time savings are one of the biggest economic benefits of shipping and ferry lines. Other advantages include the proximity of the passenger terminal of the Port of Bar to the railway and bus stations and road connections, which reduces the costs of travel and thus increases the living standard of residents and users of transport services.

An additional increase in the living standard of the local population is represented by the additional earning opportunities caused by the increase in the number of passengers and the number of ships arriving at the Port of Bar.

The calculation of travel time savings depends on the type of transportation and purpose of the trip and the time spent waiting. Quantification of the total travel time is carried out on the basis of data on the total travel time according to each purpose of the trip (working and non-working trips). The travel time of the basic solution must be deducted from the travel time of the selected solution. The monetary value of travel time savings is calculated by multiplying the calculated travel time savings for each travel purpose and the corresponding unit travel time values.

The value of time varies from state to state. When estimating the value of working time, it is necessary to distinguish what constitutes time savings. These savings include three different types of time:

- working hours,
- time spent commuting,
- non-working hours.

The value of time, if there are time savings where an employee can spend more time working, can be estimated by applying a real wage rate or willingness of the user to pay for time savings.
The value of time should, in principle, vary somewhat depending on the user's income, as well as on the length of the trip, but variations from the average of users in transportation in Montenegro are not enough to justify the use of data different from the national average.
In the absence of studies in Montenegro that would further explore the issue of the value of time, the value of time in Montenegro is currently estimated at the rate of average wage paid by employers with certain modifications.
The most of the travels to the Port of Bar refers to the value of time spent in non-working hours, but given the differences in travel times by different means of transport, it is clear that these are significant financial savings for passengers. Equipped port with the necessary facilities encourages mobility, and the construction of the terminal enables better coordination with other modes of transport, with possible savings in the total time needed to reach the required content.
Time savings are also manifested in the fact that passengers will need less time to access certain port facilities and contents, from purchasing boat tickets to accessing competent service offices.

- **Environmental impact**

Significant benefits of project implementation are the effects of reducing the environmental pollution.
Typically, for economic analysis purposes, a calculation that is used is based on the characteristics of the volume of transport (vehicle km, passenger km, tonnes) and certain external costs. The calculation of the change in environmental impacts, i.e. change in vehicles km and tonnes km, is carried out by subtracting the data about the effects of the basic solution from the effects of the design solution.

Monetization of changes in environmental impact is carried out on the basis of:

- Determined changes in vehicle km by vehicle type and tonnes km of pollutants and greenhouse gases
- Unit noise costs expressed in EUR/vehicle km by vehicle type and area
- Unit costs of major pollutants expressed in EUR/tonne
- Unit cost for greenhouse gas CO2 expressed in EUR/tonne

Unit noise costs are determined by vehicle type and area. For the purposes of this project, it is particularly possible to point out some noise reduction, as well as CO2 emissions, in the area of the Town of Bar.
Due to the traffic potential of the passenger terminal of the Port of Bar, i.e. the possibility of breaking the traffic flow and transition from one means of transport to another, since there is also a bus and railway stations near the ship and ferry port, it is possible to organize the park and ride system by upgrading the terminal, thus reducing port congestion and inducing positive environmental effects.

Table 95:Unit noise cost (EUR/vehicle km)

Type of vehicle	Urban area	Suburban area	Rural area
Personal vehicles	5,29	0,82	0,12
Light cargo vehicles	26,51	4,11	0,47
Heavy cargo vehicles	48,78	7,64	0,88
Buses	26,51	4,11	0,47

Source: Excel annex for Ricardo-AEA et al (2013) "Update of the Handbook on external costs of transport", European Commission - DG MOVE

The new personal car emits an average of 130 g/km of CO2 in the EU, while for the other major pollutants there is no single relevant data that can be used, but is substantially higher than previously

stated. At the level of Montenegro, the data are likely to differ, i.e. it is assumed that they are higher with respect to the fleet age.

The cost of CO2 emissions can be determined based on the following data:

Table 96: Unit cost CO2

Polluter	2010 unit cost of CO2 in EUR / tonne	Annual supplement 2011 - 2030 in EUR
CO2	25,00	1,00

Source: Excel annex for Ricardo-AEA et al (2013) "Update of the Handbook on external costs of transport", European Commission - DG MOVE

In addition to the above facts, it should be emphasized that the construction of the facility will be realized in compliance with the appropriate environmental and energy standards, and the noise and dust expected during construction do not represent a significant negative impact on the environment.

Aforementioned, it is certain that the implementation of the investment has great social benefits and can, therefore, be considered justified.

RISK ASSESSMENT

- The basic analyses provided an "estimate", but quantitatively, the following aspects were also considered:
- "How good is the estimate?" - recognizing the unreliability of basic analysis.
- "What is the range of possible variations?" - quantifying uncertainty.
- "What is the range of possible results?" - Identifying potential impacts on different assumptions variations and input variations of key output indicators.

As outlined below, the following steps are recommended in risk analysis:

- Sensitivity analysis,
- Frequency distribution for critical variables,
- Risk analysis,
- Acceptable risk assessment,
- Risk prevention.

- **Sensitivity analysis**

This chapter identifies critical variables whose variations (positive or negative) mostly affect the project's performance in financial and economic terms.

Supply/demand variables

The managing abilities to make a profit is one of the crucial variables, as well as successful cost management, which is a critical variable that needs to be included in a sensitivity analysis. Namely, both the financial and economic efficiency of the port depends mainly on charging the services, and the earned profit is used to achieve a higher port standard and making a profit is not the main goal. The impact of passenger traffic variation on net present value is one of the critical variables as the project also provides a higher standard and is expected to generate significant additional revenue from the increase in the volume of service offer.

Human resources

The business and performance skills of key staff are an important part of success. Employees are adequate staff, educated and motivated to achieve goals. We can assume that human resources variables can be monitored by quality implementation and risk mitigation measures.

Time and implementation variables

The implementation of the project is multi-year, which could translate the variables associated with the implementation (time, costs, the functional capability of the equipment, obtaining the necessary permits) into critical variables. Successful implementation of the plan will result in cost control, adherence to timelines and functionality standards.

Financial variables

The implementation of the project does not involve partial financing through a loan, which means that the cost of financing does not represent an additional risk. Eligible project costs are planned with co-financing from European, national, and local sources.

Economic variables

Port activities are indirectly sensitive to macroeconomic variables (GDP growth, inflation) that affect the cost and need for services. However, neither the direction nor the magnitude of this impact can be estimated with certainty. Relying on likely macroeconomic scenarios that overlook positive trends in the economy, it is reasonable to assume that macroeconomic variables will remain within the boundary, which will not significantly affect the feasibility of the project.

Political factors

The implementation of the project will be under a special magnifying glass of the public, therefore it is necessary to ensure transparency, functional public procurement and sufficient public awareness throughout the project duration.

Positive externalities

Given that the net present value of the project (financial return on investment) is negative, its feasibility depends on sufficient positive externalities (based on social benefits and non-monetary benefits). Positive externalities are only partly dependent on effective cooperation with stakeholders and are not related to profit. Accordingly, these should be analysed outside the scenario connected to profit and operating costs.

- **Analysis of variable values**

These variables were used in the sensitivity analysis:

a) Change in the investment value
b) Changes in investment value by +/- 1% were used for analysis purposes. The change in the value of the total investment also influences the change in the residual value and is taken into account during the sensitivity analysis.
c) Change in the discount rate
d) Changes in the discount rate by +/- 1% were used for analysis purposes.
e) Change in the operating costs
f) Changes in operating costs by +/- 1% were used for analysis purposes.
g) Change in the operating income
h) Changes in operating income by +/- 1% were used for analysis purposes.
i) Changes are viewed after calculating the following indicators:

- The net present value of FNPV / C

It is important to emphasize that for the purposes of sensitivity analysis, the value of the calculated financial rate is fixed. The main reason is that this analysis examines changes in the technical development of variables, without affecting the parameters that will affect the development before the operational phase of the project.

The results of the sensitivity analysis are set out in the text below.

a) Change in the investment value

Table 97: The effects of changing the value of an investment

	-1%	Original data	1%
FNPV (C)	-13,28%	-13,32%	-13,37%

Taking into account the assumption of a change in the investment value by 1%, the sensitivity analysis shows that there is no significant change in FNPV (C), which means that it is not a critical variable.

b) Change in the discount rate

Table 98: The effects of changing the discount rate

	-1%	Original data	1%
FNPV (C)	**-12,48%**	**-13,32%**	**-14,15%**

Sensitivity analysis with respect to changes in the discount rate shows that a change in the discount rate by 1% does not affect the change in FNPV (C) by more than 1%, which means that it is not a critical variable.

c) Change in the operating costs

Table 99: The effects of changing the operating costs

	-1%	Original data	1%
FNPV (C)	**-13,29%**	**-13,32%**	**-13,36%**

A sensitivity analysis with respect to changes in operating costs by 1% shows that the change does not affect the change in FNPV (C) and FNPV (K), which means that it is not a critical variable.

d) Change in the operating income

Table 100: The effects of changing the operating income

	-1%	Original data			1%
FNPV (C)	**-13,36%**	**-13,32%**			**-13,29%**

A sensitivity analysis with respect to changes in operating income by 1% shows that the change does not affect the change in FNPV (C) and FNPV (K), which means that it is not a critical variable.

Sensitivity analysis showed that the project has no critical variables that significantly affect the changes in net present value.

- **Scenario analysis**

The first step in conducting a risk analysis is to determine the distribution function for each of the influencing variables. The selection of frequency functions is regularly based on the statistical processing of real data. However, since the necessary data are not available, that is, since there were no relevant researches conducted in Montenegro on the basis of which the frequency distribution functions could be determined, the experiential data obtained from literature and research done in the US and the European Union will be used.
When relevant information is not available and the actual distribution cannot be determined with certainty, the 3 types of frequency distribution functions are most commonly used:

– normal distribution
– uniform distribution
– triangular distribution

A triangular distribution was adopted for budget calculation purposes, which fully meets the required calculation and simulation accuracy. Determining the exact frequency distribution functions goes beyond the scope of this study, but it also opens the possibility for further additional research in this direction.
For each of the critical variables, the parameters of the triangular frequency distribution functions are specified, which are shown in the table below:

Table 101: Frequency distribution

FNPV variables	Min.	Max.	Distribution
Operating costs	0.90	1.10	Triangular
Operating income	0.90	1.10	Triangular
Investment costs	0.90	1.10	Triangular

The best- and worst-case scenario is estimated below using the above frequency distributions and input factors - investment costs, operating costs and operating income.

Table 102: Simulation of best-case and worst-case scenarios

		Best-case scenario	Estimated scenario	Worst-case scenario
Investment costs	% of change	-10%	0	+10%
Investment costs	HRK	14.618.030	13.289.118	11.960.207
Operating costs	% of change	-10,00%	0,00%	10,00%
Operating income	% of change	+10,00%	0,00%	-10,00%
FNPV (C)		-14,53%	-13,32%	-12,12%

Based on the selected critical variables, quantitative risk assessment was processed by creating a simple Monte Carlo model. The variable used in presenting the final results is the financial net present value (FNPV).
The entered data for the Monte Carlo simulation are listed in the frequency distribution table.
A total of 1.000 trial cycles have been implemented. The statistical results for the two different amounts of variables are listed in the following table.

Table 103: Statistical results of Monte Carlo analysis

Unit	FNPV
Mean value	-12.864.192
Standard deviation	325.447
Minimum	-13.792.506
Maximum	-12.007.878
Range	-1.784.628
Lower quartile	-13.093.961
Upper quartile	-12.631.022
5. percentiles	-13.387.064
95. percentiles	-12.328.030
Value > 0 (%)	0%

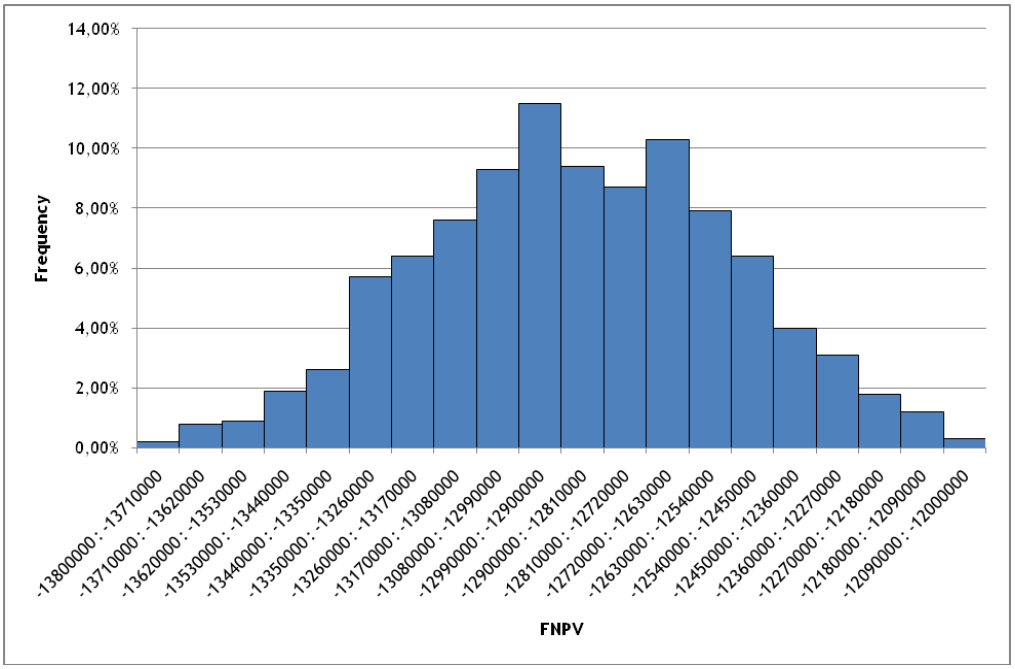


Figure 94: Frequency distribution – FNPV

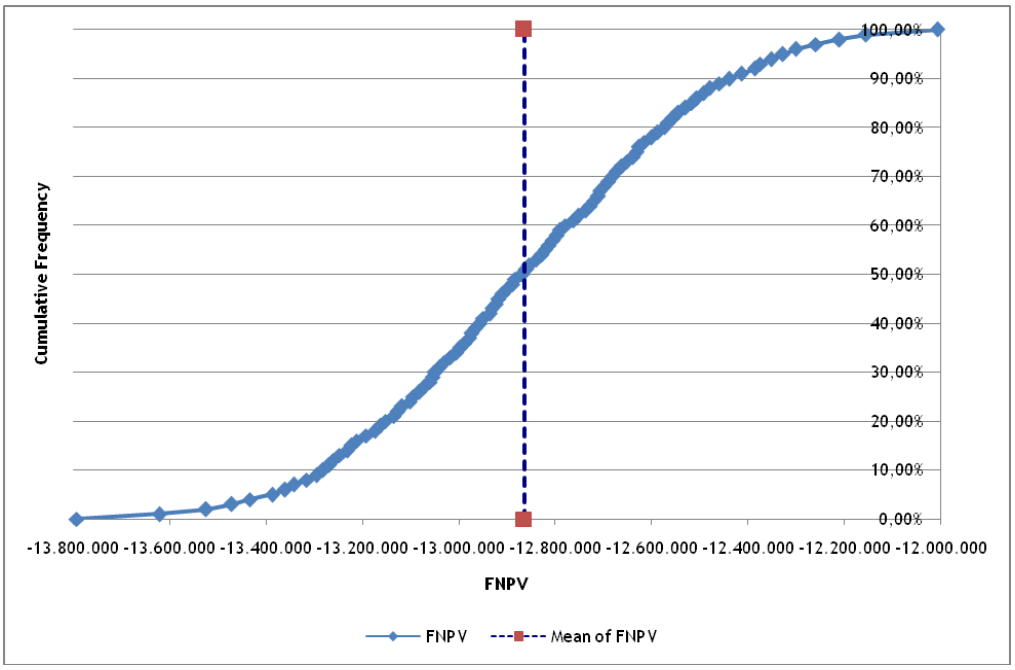


Figure 95: Cumulative frequency – FNPV

The financial net present value remained negative in all the simulations carried out, indicating that the project requires additional co-financing from European and other sources in order to be sustainable.

- **Qualitative risk analysis**

Due to the implementation of the project, unexpected situations may occur which could affect the timely realization of the project or delay it completely. Below is an overview of the most likely risks that are foreseen and their probability of occurrence, as well as their impact on the project implementation.

Table 104:Risk assessment

Risk (Variables)	Risk categorization (general, in the construction phase, in the management phase)	Probability (low, medium, high)	Impact (low, medium, high)
Incorrect cost estimate	in the construction phase	medium	medium
Obtaining the required permits	general	low	high
Difficulties in conducting public procurement procedures	in the construction phase	low	medium
Lack of interest from potential contractors and equipping operations	in the construction phase	low	medium
Insufficient work organization	in the construction phase	low	medium
Reduction in the number of lines	in the management phase	low	high
Bad weather conditions	in the construction phase	medium	high
Lack of interest for the line	in the management phase	medium	high
Operating costs	in the management phase	medium	low
Political factors	general	low	low
Legal risks	general	low	medium
Positive externalities	in the management phase	low	medium
Environmental risks	general / in the construction phase	low	low

In order to achieve the positive externalities that affect the feasibility of the project, it is possible to determine the basic risk mitigation procedures and determine their impact. Risk mitigation measures are implemented in order to reduce the probability of risk occurrence, monitor the costs, and ensure project profit. See the table below for more details.

Table 105: Risk prevention measures

Variables	Causes	Risk prevention measures	Impact of measures
Incorrect cost estimate	Miscalculation of costs can be due to the difficulty of performing works caused by unforeseen geological, water, and similar factors, which significantly complicates the works. Difficulties can also be caused by incorrect planning or by new factors that may arise during the execution of the work.	Entrusting the project to engineers with proven ability in their areas of competence, effective and responsible management, implementation of the control system, collecting more offers to minimize costs and boost competitiveness.	Preventing cost overruns, the cost-effectiveness of all procurement procedures.
Obtaining the required permits	Due to the complexity of the intervention, there is a risk of an unforeseen situation, some facts not included in the assessment in the design phase of the works. In this case, the risk is caused by the consequences that the unforeseen situation has on the implementation stages in terms of time, cost, or need to audit and modify some parts of the project.	Entrusting the project to engineers with proven ability in their areas of competence, close cooperation with the persons supervising the works.	Preventing project implementation delays.
Difficulties in conducting public procurement procedures	Considering that all contracting must be carried out in accordance with the guidelines and the Law on Public Procurement, there is a certain risk of poor preparation of procurement documents, lack of interest of the market and potential tenderers, and	Scheduled time for public procurement exceeds what is actually needed, careful preparation of tender documentation, careful planning of warranty deadlines when drafting tender documents, consulting experts regarding the procurement of	Preventing project implementation delays, preventing cost overruns, cost-effectiveness of all procurement, prevention of abuse.

	delays in the procurement process itself.	adequate and quality equipment in the project planning phase, engagement of experts in the procurement phase of equipment and supervision of infrastructure construction, control measures implemented in project administration.	
Lack of interest from potential contractors and equipping operations	In the case of miscalculated costs, short deadlines for construction or incomplete documentation, there may be a lack of interest on the part of the contractors.	Publication of a transparent and quality public tender, designation of contact persons and authorities responsible for public contracting, creating a timetable and budget for the intervention, creating a tender marked with executive models, as well as the terms and conditions of the contract for the execution of works and arranging the relations established between the contracting authority and the contractor, publication of call for tenders in relevant media and direct contact with interested parties, collecting initial offers as preparation for the call for tenders, i.e. conducting market research.	Creating the foundation for the successful implementation of the procurement procedure, fostering competitiveness, assigning tasks to companies with proven experience and qualifications, as well as guaranteeing technical and economic sustainability.
Inefficient work organization	The complexity of the project carries with it the risks associated with the need to coordinate a number of different entities: engineers, relevant institutions and public administrations, companies entrusted with the execution of the work, down to individual construction workers.	Effective implementation of the project in accordance with valid procedures and applicable standards, entrusting the project to engineers with proven abilities in their areas of competence, coordination of works by the Project Leader and external experts, assigning supervision to the task of overseeing construction compliance with the project and performing it properly, planned time to construct longer than realistically required.	Preventing project implementation delays, preventing cost overruns, prevention of abuse.
Reduction in the number of lines	Although the scenario of termination of the line is not realistic at the moment, it should not be ignored. The reasons for this may be an insufficient number of passengers, which does not justify the continued maintenance of the line or the cancellation of concessionaires and travel agencies due to the unprofitable work.	Effective promotion of the Project and concern for content adaptation for commercial and market competition, collaboration with stakeholders in creating traffic timetables, informing the public about the services provided.	Financial and economic efficiency and sustainability; and a sufficient level of line utilization.
Bad weather conditions	When carrying out complex work, the risk of extending the deadline for realization is always present, since the execution of works is related not only to the time of realization of individual processes, but above all to the correct coordination of the various actors involved, but also to external conditions such as weather.	Planned time to construct longer than realistically required.	Preventing project implementation delays.
Lack of interest in the use of line	Among other management risks, is the one related to the inability to achieve the expected utilization of the terminal, tourism growth, development of the area, as well as overall economic growth.	Effective promotion of the project and concern for content adaptation for commercial and market competition, collaboration with stakeholders in creating traffic timetables, informing the public about the services provided, organization of additional projects, employee education.	Financial and economic efficiency and sustainability; and a sufficient level of line utilization.

Operating costs	Estimated operating costs of project implementation are higher than originally planned due to miscalculated maintenance costs, neglect of specific types of cost, or poor planning.	Effective and responsible management, implementation of control systems to support strategy implementation and cost reduction, collecting more offers to minimize costs and boost competitiveness, concluding annual contracts through public procurement for the procurement of the most critical goods and services, cost planning on an annual basis, assurance of equipment and infrastructure, planning major investments, participation in public tenders for grants.	Cost control, financial savings on procurement, effective leadership, reducing the risk of significant damages/malfunctions and extraordinary costs, liquidity assurance, transparency.
Political factors	As the subject construction works in question play a significant strategic role in this area, they are a matter of political interest. Possible risks are related to interference by political fractions and ad hoc organizations.	Transparency in implementation, continuous raise of public-awareness, effective implementation, monitoring and external evaluation, careful preparation of tender documentation.	Transparency. Preventing negative publicity. Preventing political conflicts.
Legal risks	These are the risks associated with the possibility of initiating a dispute during the course of project implementation and during management. The entities involved may be companies entrusted with the works, physical persons, or third legal entities.	Creating a call for tenders marked with executive models, as well as the terms and conditions of the contract for the execution of works and arranging the relations established between the contracting authority and the contractor.	Transparency, preventing negative publicity, preventing additional costs, preventing project implementation delays.
Positive externalities	There is a risk that stakeholders will not be satisfied with the level of service, therefore they will use alternative modes of transport and the Project will not realize positive externalities.	Efficiency and high quality of service, effective collaboration with stakeholders, effective promotion, target group engagement plan, supporting entrepreneurs, further investment in the business, coordination with the tourism sector.	Realization of positive trends, job creation, supporting the creation of new entrepreneurial ideas, positive effects on the traffic, goal achievement.
Environmental risks	In the construction phase, environmental risk is related to the possible discharge of pollutants from the construction site or pollutants arising directly from the work performed. They also cover the risks associated with waste, especially those containing toxic features.	Assigning supervision to the task of overseeing construction compliance with the project and proper performing of construction works, assigning tasks to companies with proven experience and qualifications, as well as guaranteeing technical and economic sustainability, using recommendations from an Environmental Protection Study.	Preventing negative publicity, prevention of environmental pollution, preventing project implementation delays.

Project implementation planning includes risk prevention mechanisms and measures, and budget lines that are separately planned to ensure transparency, timely implementation of the project, cost-effectiveness, as well as financial sustainability of the project.

Case study's financial soundness

This paragraph intends to synthesize all the quantitative and qualitative data collected in the previous paragraphs in order to evaluate the case study's financial soundness and risk levels.

Table 106: Financial risk levels for each phase of the project

Project phases	Financial risk levels	Description
Phase 1. Concept definition	Low	Economic resources coming from European projects and national sources cover all necessary costs.
Phase 2. Pre-feasibility study	Low	Economic resources coming from European projects and national sources cover all necessary costs.
Phase 3. Feasibility study	Medium	In order to prepare a feasibility study and required project documentation, it is necessary to ensure additional funding from European, national, regional, or own sources.
Phase 4. Project implementation	High	No funds have been ensured to carry out the investment, but they have yet to be acquired.
Phase 5. Operation & maintenance	High	Operating income per implementation phase of the project is sufficient to cover all expected operating expenses, along with the co-financing funds from other regular investor activities.

3.7.5 Technical Sustainability and intermodality promotion

This paragraph intends to analyse the key technical and technological aspects of the Inter-Connect case studies in order to understand the enabling technologies supporting the planning and/or the implementation and the management of the Inter-Connect case studies. A specific focus is dedicated to evaluating the practical solution supporting the intermodality promotion.

Enabling technologies

The latest ICT developments offer new opportunities to enable a leap forward in the way collective and individual mobility services are organized and offered. This paragraph intends to analyse the enabling technologies allowing the Inter-Connect case study's development and the way these technologies support the case study's development.

Table 107: Enabling technologies for the case study

Enabling technologies	Brief description of the technology and the role (potential role) in the case study
Multilingual public transport service passenger information	There are difficulties in obtaining all relevant information on the available transport options, so it is necessary to enable passengers to have better access to all relevant information in a multilingual form, as frequent users of public transport are foreigners.
Introduction of info boards on stations with live arrival and departure boards	Passengers need to be informed on time about the status of transportation so that passengers can prepare for unforeseen circumstances of changing travel timetables.

Establishment of integrated public transport web and mobile app user interface.	In order for users to be able to easily combine different modes of transport in one place with minimal time waste, a web or mobile app interface should be developed that summarizes all relevant information. This would make information more accessible to passengers and would, thus, encourage the use of public transport.
Public transport info points	Significant terminals should allow locations where direct information on transport options can be obtained, in order to direct the passengers to use public transport.
Various touristic packages	In order to encourage users to use public transport, it is also necessary to implement measures that include benefits for certain tourist attractions, i.e. sell ticket packages that include additional benefits, in order to try to reduce road transport as the prevailing mode of transport. It also gives impetus to the tourism sector.
Single integrated ticket for all modes of transport in the pilot area	Buying tickets is often a significant waste of time, and if the sales system is not sufficiently developed, it can discourage some passengers from using public transport, especially in cases where the transferring occurs and often the time for buying tickets is limited. In this way, passengers are guaranteed the opportunity not to miss certain trips and it is timesaving as well.
Various payment methods for all modes of public transport (paying with credit cards, smartphones, online banking, smart ticketing)	Making payments easier by focusing on more advanced technologies saves time, makes it easier for travellers to pay, as they are not required to have paper money with them, and especially for foreigners who do not have the local payment currency available.
Big data analysis tool	Thanks to the use of advanced technologies, it is possible to gather a large amount of information about the movement of passengers, making it easier to identify the necessary key corrections in the transport system in order to respond to the needs of passengers.
Coordination of public transport timetables for all modes of transport.	Better coordination of different public transport systems reduces the time spent waiting, which can often delay some of the passengers who intend to travel using a combination of different means of transport. This encourages an increase in the number of public transport users.
Reformulation of concession areas and frequencies of the public transport services	Adjustment of timetables and the introduction of temporary lines in areas with a significant number of tourists can encourage them to rely more on the use of public transport.
Encourage, promote and educate about the benefits of using public transport	Through publicly available media, it is necessary to educate potential users about the benefits of public transport in order to increase their number.

The technologies listed above have not been introduced at the introduction stage, but are just ideas. However, similar technologies are already in use in locations across Europe and have proven to be effective. The client can buy existing, ready-made solutions or order the creation of new applications with the desired settings, which takes a little longer time to develop, test, and finally commercially apply.

Case studies contributions to the intermodality promotion and environmental impacts reduction

This paragraph analyses the key numbers allowing the evaluation of the case study contributions (or foreseen contributions) to the promotion of the transport intermodality promotion.

Table 108: Key technical KPs

Indicator	Indicators	Data (real data if available or estimated/expected)
Transport modes integrated	Number and mode (train, bus, ship, ferry, airplane, bikes, etc.)	5 (train, bus, ship, ferry, airplane)

MaaS approach	YES/NO	YES
Foreseen users	Number	761.000 (estimated/expected)
Traffic reduction*	% or Co2 emissions	Could not be estimated
Pollution reduction*	% or Co2 emissions	Could not be estimated
Time table integrations	YES/NO	YES
App for final users	YES/NO	YES
Others	…	

* Please describe the methodology you used for the calculation of these indicators.

3.7.6 Other materials and contacts

Methodological documents related to the case study are available here:

- https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cba_guide.pdf
- https://www.eltis.org/sites/default/files/guidelines-developing-and-implementing-a-sump_final_web_jan2014b.pdf
- http://www.rupprecht-consult.eu/uploads/media/SUMP_guidelines_web0.pdf
- https://ec.europa.eu/transport/themes/strategies/2011_white_paper_en

The main contacts of the main stakeholders working on the case study are:

Ministry of Transport and Maritime Affairs
link: http://www.minsaob.gov.me/en/ministry
contact: kabinet@msp.gov.me

Bar Municipality
link: http://www.bar.me/
contact: opstinabar@bar.me

“Barska plovidba” JSC
link: https://www.montenegrolines.net/
contact: online@barplov.com

Tourism Organization of Town of Bar
link: https://www.visitbar.org/
contact: tobar@t-com.me

“Railway Transport of Montenegro” JSC Podgorica
link: http://www.zcg-prevoz.me/
contact: info@zpcg.me

"Railway Infrastructure of Montenegro" JSC Podgorica
link: http://www.zicg.me/
contact: sefkabineta.id@zicg.me

Interlog Bar (representative of Grimaldi Group)
link: https://www.interlog.me/
contact: info@interlog.me

There are institutional and political synergies with other European/national/regional/local initiatives and/or programs. A brief description of these synergies is provided below.
Action plans and strategies as listed earlier in the study (Transport Development Strategy - Montenegro 2019-2035, Spatial Plan of Montenegro until 2020, National Strategy for Sustainable Development until 2030, Regional Development Strategy of Montenegro 2014-2020, the Railway Development Strategy for the period 2017-2027, Airport Development Master Plan of Montenegro for the period 2011-2030, Tourism Development Strategy of Montenegro until 2020) are aligned with the European Union accession policy in the field of Trans-European Transport and Energy networks (TEN-T and TEN-E).
The Trans-European Transport Network (TEN-T) was established in order to facilitate the flow of goods and people between EU Member States faster and easier. The overall objective is to bring different parts of Europe geographically and economically closer through the development of railways, roads, ports, airports, inland ports, and traffic management systems.
The ultimate objectives of TEN-T are to create the missing links on the transport network, remove bottlenecks and eliminate the technical barriers existing between the transport networks of EU Member States, to strengthen the social, economic and territorial cohesion of the Union and to contribute to the creation of a unified European transport area. These goals will be realized through the construction of new transport infrastructure, the adoption of innovative digital technologies, the use of alternative fuels, the introduction of universal standards and the modernization and upgrading of existing infrastructure and frameworks.
An independent, modern, and efficient transport system is a prerequisite for overall economic, social and territorial cohesion. In line with European sustainable urban mobility policies, cities need to secure a multimodal transport system and work on intermodal integrations, as a major component of any urban mobility strategy based on the principles of sustainable transport.
The case study is also linked to other EU/national projects, as follows:

EA SEA-WAY (IPA ADRIATIC Programme)

EA SEA-WAY was IPA Adriatic cross-border Cooperation Programme which lasted from November 2013 till February 2016. The general objective of European Adriatic Sea-Way (acronym EA Sea-Way) was to improve the accessibility and the mobility of passengers across the Adriatic area and its hinterland, through the development of new cross border (CB), sustainable and integrated transport services and the improvement of physical infrastructures related to those new services.

In particular, specific project objectives were to:

- integrate and upgrade existing and new collective passenger (tourists and residents) transport services in order to increase the accessibility across the Adriatic basin and decrease CO2 emissions.
- explore a better integration of urban and regional connections between ports, airports and main tourist destinations/urban areas.
- develop new or renovate existing infrastructures in the Adriatic port system in order to promote and encourage a more sustainable and efficient passenger transport.

- foster passenger sea transport and other collective transport means connected to the port system.
- test new governance models in the light of the forthcoming Adriatic Ionian Macro Region.

The project total budget was 6.657.204,68 €. Countries included in the project were: Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro, Serbia, and Slovenia with a total number of 20 beneficiaries and 16 associates.
Link: http://www.easeaway.eu/
Link: http://www.lukabar.me/index.php/en/15-razvoj/razvojni-projekti/168-ea-sea-way-about-project

CAPTAIN (IPA ADRIATIC Programme)

CAPTAIN strategic project is financed under Priority Axis 3 "Accessibility and Networks" of the IPA Cross Border Programme 2007-2014. The general objective of the CAPTAIN strategic project is that of the capitalization of transports' models in the network of the Adriatic – Ionian Area to support EUSAIR development.
CAPTAIN aims to improve the accessibility and the mobility across the AI Area through the integration of ports with hinterland and transport networks for passengers and freight, the harmonization of services for passengers with special needs in the Port system and the development of sustainable, safe, cross border and integrated transport services and the improvement of the related physical infrastructures.
These goals will be reached through the capitalization of the following projects: EA SEA-WAY, Adrimob, and AdriaticMoS.
The specific objectives of the project are:

- to promote analysis and feasibility studies for the implementation of actions of EUSAIR Pillar 2;
- to create synergies among EA SEA-WAY, Adrimob, AdriaticMoS projects, and their partners to develop a broader network of main transport actors and to transfer best practices;
- to develop exchanges and synergies through tools, best practices, and models implemented in EA SEA-WAY, Adrimob, AdriaticMoS;
- to increase the impact of EA SEA-WAY, Adrimob, AdriaticMoS on regional/national policies in the AI Area to guarantee coordination of interventions to overcome bottlenecks and missing links in passenger and freight transport.

To make feasible transferability and dissemination towards AI Area and beyond Activities will be developed in seven Countries (Italy, Slovenia, Croatia, Greece, Montenegro, Albania, Bosnia, and Herzegovina) by a multi-skilled partnership composed by regional authorities competent in transport policies, relevant public bodies, research and operational bodies, ports and Universities.
The regional Central Directorate for Infrastructure and Territory, coordinator/ Lead partner of the project, is developing and sustaining the establishment of an observatory on passenger transport on AI Area and its synergic connection with MEDNET Port Operations Observatory for the fine-tuning and adaptation of main strategic results and the development of Motorways of the Sea to improve the sustainable mobility in AI Area.
Link: http://www.lukabar.me/index.php/me/15-razvoj/razvojni-projekti/223-captain

ADRIMOB project (IPA ADRIATIC Programme)

ADRIMOB project is in line with Priority 3, Measure 3.2, of the IPA ADRIATIC Cross-Border Cooperation Program, which aims at favouring the development of sustainable transport systems along and between the Adriatic coasts and their inland.

It is necessary to plan an integrated sustainable transport strategy that favours the sustainable movement of an increasing number of people traveling for various reasons: workplace, tourism, business, etc. Therefore, the project intends to strengthen and integrate the network of infrastructure, development, and improvement of transport and communication services.

The ADRIMOB project covers the main ports of the cross-border area, i.e. Venice, Ravenna, Rimini, Cesenatico, Pesaro e Urbino, Pescara, Brindisi, Bari, Rovinj, Rab, Split, Durres, Bar, and Igumenica.

The aim of the project is to propose concrete solutions to the actual problems, by improving the accessibility, infrastructure, and transport networks of the Adriatic area.

The specific objectives are:
- Encourage the use of maritime transport for passengers between and along the coasts;
- Improve the quality of transport in the Adriatic area;
- Strengthen and integrate existing infrastructure networks;
- Define a strategy for cross-border maritime transport in the Adriatic Sea, in combination with other modes of transport;
- Increase the use of alternative transport in relation to car usage;
- Promotion of existing activities.

Link: http://www.lukabar.me/index.php/me/15-razvoj/razvojni-projekti/175-adrimob

3.8 Case Study 7: The Durres and Tirana case study, Albania

3.8.1 Case study description

Interconnectivity for our networks is better examined based on the Economic/Financial Appraisal for the rehabilitation of the whole Albanian railway network but the area considered for this case is between Tirana and Durrës region including the area of international airport Rinas (Picture 1). The location of the technological digital solution will be more focused on the area between Durrës ferry terminal and Central train station of Durrës.

Figure 96:Map of area of Durres -Tirana-link to internal airport

The area between Tirana and Durrës region is characterized by the dominance of road transport on land bound routes and a large number of smaller and bigger ports at the coast line.
The connections to the hinterland are poor with many bottlenecks on multimodal connections, while coordination is also inadequate. This is evident by the maritime traffic congestion at ports and the border waiting times, as the number of visitors and the volume of container transport are increasing in the area.

Table 109: Case study development phases' descriptions

Case study phases	Case study phases	Brief description of each phase "Study on developing and implementing a technological solution for intermodal transport"
Phase 1	***Concept definition***	Given the reason that for Albania's rail sector is lagging behind other transport sectors, this study aims to present the basic methodological steps used for the elaboration of a CBA study and the prioritisation of investments of the whole railway network of the country Albania. The study comprises 1. The preparation of an analytical technical database and the calculation of rehabilitation costs of all railway lines. 2. The analysis of the existing transportation system and the production of passenger and freight transport demand forecasts for alternative railway development scenarios. 3.The calculation of financial and economic performance indicators for alternative railway development scenarios. 4.The quantitative and qualitative prioritisation of alternative railway development scenarios, final proposal for

		prioritisation of railway sections.
Phase 2	***Pre-feasibility study***	a) The technical study provides the basic technical characteristics of the railway network, which are fed into the traffic study for the proper coding of the network and also the construction costs and timelines for the rehabilitation of each section fed into the CBA study for the determination of Capital expenditures. b) The traffic study provides the future transport demand for predetermined time horizons and various railway development scenarios, which is fed into the CBA study for the determination of benefits from the diversion of traffic from road to rail. c) The CBA study combines the input from the two previous steps and applies a special methodology to calculate quantitative financial and economic indicators for each of the railway development scenarios considered under the traffic study. d) The prioritisation of investments is carried out considering the results of the CBA and additional qualitative criteria in the context of a multi-criteria analysis.
Phase 3	***Feasibility study***	The overall economic performance indicators of the scenarios evaluated in the CBA analysis are summarized in the form of graphic in Table 1 "Case study development phases' descriptions" below, including the economic performance indicators. The economic impacts of the 9 scenarios assessed (DO ALL, S1, S2, S3, S4, S5, S6, S7 and S8) are positive.
Phase 4	***Project implementation***	By analyzing the traffic demand, we could identify all stakeholders and collecting current data of traffic flow, which will provide information on how to improve passenger mobility and to explore new possibilities for use of the technological innovative solution. This study will consider the development on rail sector, and prioritize some of identified strategic national projects, to propose the best scenarios for implementing these infrastructure project and impact they will have on the traffic and the mobility of the passengers and tourists.
Phase 5	***Operation & maintenance***	*N/A*

Phase 1. Concept definition

The study will support the developing and implementing a technological solution for intermodal transport - Real time information of travelers through digital timetables harmonization for travelers using the ferry and rail transport and when needed air transport. It is considered that these institutions have insight in the issues that will be explored, as well as interest and knowledge needed.
The objective of this case is to enhance intermodal transport between rail +maritime +air transport (and possibly other modes of transports) especially between Tirana and Durres region. This technological solution will be developed to primarily reflect the travel information on ferries, trains and flights, with the option of expanding the range of travel and locations at a later point.

Phase 2. Pre-feasibility study

In order to gather data on development trends of railway traffic, this study has taken into consideration all existing railway infrastructure systems, economic and financial assessment of the network, as well as all investments that are needed to improve and to increase the operation network.
This increased infrastructure and all data collected will serve to integrate the information into this innovative technological solution.
Other technical studies as below will serve to collect data and information for our case:

a) The technical study provides the basic technical characteristics of the railway network, which are fed into the traffic study for the proper coding of the network and also the construction

costs and timelines for the rehabilitation of each section fed into the CBA study for the determination of Capital expenditures.

b) The traffic study provides the future transport demand for predetermined time horizons and various railway development scenarios, which is fed into the CBA study for the determination of benefits from the diversion of traffic from road to rail.
c) The CBA study combines the input from the two previous steps and applies a special methodology to calculate quantitative financial and economic indicators for each of the railway development scenarios considered under the traffic study.
d) The prioritization of investments is carried out considering the results of the CBA and additional qualitative criteria in the context of multi-criteria analysis.

Phase 3. Feasibility study

The feasibility study will serve as a road map, form prioritizing the infrastructure project and to identify the best scenarios.
In this study, priority is to explore and to analyse the needs of travellers and also to develop a technical solution for intermodal transport for sharing the information in real-time.
All travellers will be informed in the real-time throw digital billboard for all timetables of rail, maritime and air transport.

Phase 4. Project implementation

In this phase all the integral parts of the Albanian railway network as shown in the 8 scenarios are under feasibility and preferred technical solutions.

3.8.2 Stakeholders engagement

Main public and private stakeholders involved

Main stakeholders involved in this case are:

Ministry of infrastructure and Energy (MIE). The mission of the Ministry of Infrastructure and Energy is: formulation, application and monitoring of the policies, programs, and national standards of road , air, rail, maritime transport infrastructure, contribute to the safety, security and efficiency of all modes of transport the protection of the environment. The great benefit of the MIE will be the Common understanding with other Project Partners for multimodal, environmental-friendly and low carbon transport and mobility infrastructures and services; - Increase in the implementation options for multimodal, environmental-friendly and low carbon transport and mobility infrastructures and services; - Enhancement of the maturity and coordination of investments in mobility infrastructures and services.

Durrës Port Authority (DPA) is the most important port of Albania and represents therefore the main gate for arriving to and leaving from Albania; most of its traffic are with the countries involved in the Mediterranean areas. The competences of the Durres Port Authority staff in designing and implementing the policies and strategies having in mind the national and EUSAIR priorities, and previous experience in the participation of other cross border project will be an added value and gives a real strategic value of the project partnership. DPA will bring the experiences of significant projects already carried out in the programme area, this will ease the valorization of the achieved results, avoiding the reiteration of similar activities
Albanian Railways (AR) is the state-owned operator of the Albanian railway system which also performs the operational and continuous direction of the complete train movement.

Institute of Transport (IT) is a legal institution, specialized in performing studies on road, railway, maritime and air transport, has the mission to perform long-term and medium-term studies for transport system development. Institute of Transport main objective is to conduct and support the applied research activities in the field of transportation in Albania.
Ministry for Europe and Foreign Affair (MEFA) - Responsible for leading the process of accessing the EU and horizontal monitoring of the use of pre-accession funds and other EU instruments available.

Table 110: Stakeholders involved in the case study

Type of stakeholder	Stakeholders and brief description	Role in the case study
Public authority / decision makers	Ministry of Infrastructure and Energy (MIE) Ministry for Europe and Foreign Affairs (MEFA) Durrës Port Authority (DPA) Albanian Railways Institute of Transport	Public administration develops strategies and promotes and encourages the implementation of plans. The public administration also ensures the financing of projects and makes the final decisions on project implementation and investment locations.
Private operators	Railway industry operators Albanian railways partners SME railway undertakings	Operate and manage the terminals and provide transport services
Citizen/Customs	Citizen	Provide feedback regarding the quality of services and propose new measures that must be taken for service improvement in the future
Others		

Engagement levels

Table 111: Level of engagement of stakeholders

Stakeholder	Level of commitment	Brief description of the commitment level
Stakeholder 1: MIE	Inform, consult, collaborate, empower	The institution responsible for formulation, application and monitoring of the policies, programs, and national standards of road, air, rail, maritime transport infrastructure, contribute to the safety, security and efficiency of all modes of transport the protection of the environment. Will stimulate cooperation, harmonization and interoperability that will enhance intermodal transportation. Will ensure the travel information on regular and updated traffic flows and timetable of passenger ships at Albanian Ports combined with public transport info-mobility.
Stakeholder 2: MEFA	Inform, consult, collaborate	High level of commitment from the GoA is a member of National Investment Committee via the SSPP/SPP
Stakeholder 3: HSH	Collaborate and empower	Will contribute to the better integration of regional connections between ports, airports and main tourist destinations/urban areas
Stakeholder 4: MFE	Inform, consult, collaborate	The fiscal space should always allow the implementation of the project in the infrastructure included critical infrastructure and the Rolling stock and/or equipment

Stakeholder 5 Durrës Port Authority	Collaborate and empower	Will support the case examination on developing and implementing the technological solution in the intermodal transport.
Stakeholder 6 Institute of Transport	Inform, consult, collaborate, empower	Collaborate with other institution to support harmonization of bus, train and maritime timetables, Provide information on how to improve passenger mobility and to explore new possibilities for use of the technological innovative solution;

Stakeholders influence-interests matrix

Table 112: Influence-interest matrix

	Low Influence	High influence
Low stake	Rail operators	Citizens MFE
High stake	MEFA	MIE Durrës Port Authority Institute of Transport Albanian Railway

Engagement Strategies

One aspect to be addressed is the means of engaging stakeholders to improve the efficiency and effectiveness of their involvement and to avoid disputes. There are several specific techniques for achieving stakeholder participation.

Table 113: Engagement strategies

Engagement strategies	Do you use this strategy in your case study? (Yes/No)	Brief description of the engagement strategy used
Invitation Letters	YES	
Questionnaires and Surveys	Yes	The survey are done and well described by the study from the EU TA team
Exhibitions and Road Shows	Yes	Thematic fairs twice a year
Public Meetings	Yes	
Use of the full range of the media	yes	Every 6 months dedicated communications in the media and newspapers
Structured interviews	No	
Forums	No	
Focus Groups	Yes	NGO and civil society group
Advisory Committee	No	
Workshop	Yes	
Round Table Discussions	Yes	Regional and national as well as local round table

Public-private agreement	NO	
Participatory processes	yes	
Memorandum of Understanding (MoU)	Yes	Agreement with main stakeholder

3.8.3 Institutional and Political Sustainability

Main national and regional policies supporting the case studies

The main national policies supporting this case study's actions are as below:

- The National Strategy for Development and Integration (2015-2020) of the Republic of Albania, presents our national vision for the social and economic development of Albania over the period 2015 to 2020. Pillar II- Sustained growth through efficient use of resources - Strategic goals of the National Strategy for Development and Integration in terms of economic development; take into consideration the vision of the European Union to ensure the development of a competitive European economy based on a balanced and sustainable use of resources. Priority will be to further develop the country's infrastructure to provide greater access to the population, in parallel with its further integration into European systems.
- The National Transport Strategy and Action Plan 2016-2020 was released in 2016 and constitutes the most important transport policy in recent years since continues the previous national programmes, is aligned with EU objectives and priorities, and is based on a comprehensive and detailed situation of the Albanian transport sector, considering infrastructure networks, regulations and financing instruments.
  The main goal of the strategy is to have an efficient transport system, integrated in the region and in the EU network, which promotes economic development and upgrades the citizens' quality of life.

- Albanian National Transport Plan (ANTP 3), "Second third part of the Five Years Review of the Albanian National Transport Plan (ANTP3)" contains the preliminary results corresponding to "Methodology on estimation of indicators for all transport modes" and "Sub-sector Transport Plans and Updated National Transport Plan ". ANTP is based on principles of improving Albania's competitiveness, integrating it into the European and international community, meeting its public service obligations, ensuring better living conditions for its people and creating an environment conducive to economic and social development.
- General National Plan of Albania. The purpose of drafting a National General Plan consists of creating the management platform and necessary legal guarantees for a sustainable urban, economic, social and environmental development in the territory. Specific strategic goals aimed at meeting of National General Plan, based on the principles of the Law of territory planning are: ensure sustainable development of the territory, through the rational use of land and natural resources; assess the current and future potential for development of the territory in national and local level, based on the balance of natural resources, economic and human needs; private and public interests etc.

Other international strategic documents:

- The South-East Europe Transport Observatory (SEETO) is of special relevance in this transnational context. The aim of the SEETO is i) to promote cooperation on the development of the main and ancillary infrastructure on the multimodal SEETO

Comprehensive Network , and ii) to enhance local capacity for the implementation of investment programs.

- EUSAIR Pillar 2: Connecting the Region, -To develop reliable transport networks and intermodal connections with the hinterland, both for freight and passengers. -To achieve a well-interconnected and well-functioning internal energy market supporting the three energy policy objectives of the EU – competitiveness, security of supply and sustainability.
- South East European - SEE2020 - to improve living conditions in the region and bring competitiveness and development back in focus, closely following the vision of the EU strategy Europe 2020;
- Connectivity Agenda - Improving connectivity within the Western Balkans, as well as between the Western Balkans and the European Union, is a key factor for growth and jobs and will bring clear benefits for the region's economies and citizens. However, it is not only infrastructure that will enhance connectivity. Similarly important is the implementation of technical standards and soft measures such as aligning and simplifying border crossing procedures, railway reforms, information systems, road safety and maintenance schemes, railway unbundling and third party access.
- Urban Agenda, Priority 10 Urban mobility - The objectives are to have a sustainable and efficient urban mobility. The focus will be on: public transport, soft mobility (walking, cycling, public space) and accessibility (for disabled, elderly, young children, etc.) and an efficient transport with good internal (local) and external (regional) connectivity.

Governance scheme adopted

Ministry of Infrastructure and Energy encourages the signing of Memorandum, and as a lead institution which has the field of transport under its responsibility, guides the process to agree the issues that will be part of this MoU.
The purpose of this MoU is to enhance the collaboration among partners, to continue to support the promotion of intermodal passenger's transport and to support users of intermodal transport.
This MoU paves the way for the further collaboration between institutions, as well as it helps to:

- stimulate cooperation, harmonization and interoperability that will enhance intermodal transportation.
- collect/provide the information on how to improve passenger mobility and to explore new possibilities for use of the technological innovative solution;
- promote multimodality, while also taking into account environmental aspects (e.g. air emission, etc.), economic growth and social development.

3.8.4 Financial Sustainability

This paragraph collects quantitative and qualitative information on financial sustainability of the Inter-Connect case studies. The aim of the financial sustainability analysis carried out in this chapter is to evaluate if the Inter-Connect case studies are/will be supported by a strong and replicable business model

General information on the case study's financial scheme

The financial resources for the implementation of the case study depends on the stakeholders interested to offer the new services on developing a technological solution for intermodal transport. MIE expresses its willingness to collaborate with stakeholders.

Case study's general costs

Table 114: Case study's general costs

Cost	Quantification (€)	Notes
Total investment required in € (approximately)f	11.000 €	External expert for feasibility study
Foreseen investment duration (years)	To be defined after the feasibility study what is needed	To be defined after the feasibility study what is needed

If you have more detailed economic information, please provide more data.

Expected economic resources and their duration

All the economic resources supporting the implementation of the projects are subject of Mid - term budget framework. It is very important to underline that, in order to plan the project in Albanian Mid - term budget, it must be part of the Single Sector Project Pipeline list approved by Albanian Government which is subject to periodic updating.
Furthermore, these projects need national coordination during the preparation phase until they reach the Single Project Pipeline. They have a long-term implementation period and thus call for very good sequencing of implementation, high cross-border relevance, besides the significant impact on other components of the socio-economic development strategies of the Western Balkans Six.
This methodology aims to identify, prepare and select for funding the prioritized investment projects, regardless of the source of funding, through the establishment the National Investment Committee and of the Single Project Pipeline Currently, this structure has experienced a slight transformation to becoming National Investment Committee, taking on the principles of ownership, strategic coherence, long-term sustainability and transparency, as well as political commitment for the final approval of the list of projects included in the Single Project Pipeline Taking into consideration that our case is currently in the concept idea/note phase and the Single Project Pipeline is a complex process (it has its procedure and timeline that should be followed), in this phase it is not possible to provide economic recourses that will support the implementation of project. The feasibility study will provide us with the necessary information regarding the technical and financial aspect and after that we will consider in the future the plan and the source of financing.

Table 115: Expected economic resources

Kind of funds	Availability and date of availability	State of the financing	Duration	Brief description
European funds	Yes	To be defined	-	Foreseen request
National funds	No	-	-	-
Regional funds	No	-	-	-
Private funds	Yes	To be considered	-	In case the private economic operators will show interest
Subsidies/Incentives	Yes	To be considered	-	In case the private economic operators will show interest
Internal/own economic resources	N/A	-	-	-
Others	N/A	-	-	-

Foreseen revenues streams/internal economic resources

The implementation of our case will not generate revenues, because its main purpose is to help and to inform the travelers in the real time for all the timetables of rail, maritime and air transport.

Table 116: Foreseen revenues streams/internal economic resources

Revenues streams	€ (Estimation)	Description
Public transport tickets sales	It belongs the long-term period	The launch of a new integrated ticket will improve the service and also will increase the ticket sell but considering the e-ticket service situation in Albania, this indicator will be considered in the long term.
Advertising	-	-
Concessions to private operator(s)	Long term period	Cooperation between public and private operators should be consider in the future for improving the service of public transport.
External economic collaborations	-	-
Others	-	-

Case study's financial soundness

Table 117: Financial risk levels for each phase of the project

Project phases	Financial risk levels	Description
Phase 1. Concept definition	Low	*Identifying needs and opportunities.*
Phase 2. Pre-feasibility study	Low	*The economic resources coming from European projects and regional authorities cover all the pre-feasibility studies and staff costs needed.*
Phase 3. Feasibility study	Medium	For preparing a feasibility study and required project documentation, it is necessary to ensure additional funding from European, national, regional, or own sources.
Phase 4. Project implementation	High	The required financial resources needed for the project implementation are not found.
Phase 5. Operation & maintenance	High	Operation and maintenance costs are not foreseen in the implementation phase. The measure needs additional economic resources.

3.8.5 Technical Sustainability and intermodality promotion

This paragraph intends to analysis the key technical and technological aspects of the Inter-Connect case studies in order to understand the enabling technologies supporting the planning

and/or the implementation and the management of the Inter-Connect case studies. A specific focus is dedicated to evaluate the practical solution supporting the intermodality promotion.

Enabling technologies

The improvement of service quality by using the technologies will offer new opportunities for travellers or passenger, and this can serve as an incentive to increase the use of public transportation.

Table 118: Enabling technologies for the case study

Enabling technologies	Brief description of the technology and the role (potential role) in the case study
Digital billboard	TRL1 - TRL1 –This technological solution will reflect the travel information on ferries, trains and flights. Travelers will be informed in the real time about the timetables, arrivals and departure boards, delays, combination of difference mode of transport etc.

Case studies contributions to intermodality promotion and environemtnal impacts reduction

Ministry will promote the use of intermodal transport via various channels including the Ministry of Transport web- site integrated digital timetables information.

Table 119: Key technical KPs

Indicator	Indicators	Data (real data if available or estimated/expected)
Transport modes integrated	Number and mode (train, bus, ship, ferry, airplane, bikes, etc.)	Bus, train
MaaS approach	YES/NO	No
Foreseen users	Number	All passengers that use ferries, trains and buses.
Traffic reduction*	% or Co2 emissions	N/A
Pollution reduction*	% or Co2 emissions	N/A
Time table integrations	YES/NO	In the future will be taken into consideration
App for final users	YES/NO	N/A
Others	…	

3.8.6 Other materials and contacts

The case study is in line with:

- Sectorial Strategy of Transport 2016 – 2020
- Albanian National Transport Plan (ANTP 3)
- National Plan for European Integration 2019 – 2020
- National Strategy for Development and Integration 2015- 2020

- EUSAIR
- South East European - SEE2020
- Connectivity Agenda
- Urban Agenda

The case study related with other EU/national projects:

- SEETAC Project which delivered successful and important results in providing a harmonized data collection and a coherent international traffic forecasting model for the SEE region.
  SEETAC aimed at analyzing possible integration between the Western Balkans and the EU transport systems, both on land and on sea, in order to generate transport continuity and infrastructure development in the European area and beyond, with the ultimate aim to integrate the Western Balkans countries in the European market. The overall project objective was the establishment and implementation of an effective and coordinated South East Transport Axis (SETA) framework, in order to reach the EU's objectives of transparency and information reliability, harmonized and efficient institutional framework and implementation of the transport priority projects. Finance by Transnational Cooperation Programme;

- ACROSSEE project aims to improve transport connections in South East Europe through removing bottlenecks and improving regional cohesion. A series of actions that will this project propose should allow the reduction of waiting at the border and streamline documentation. It should also propose additional rail lines in southeast of Europe and connect them to the TEN-T network of European transport corridors. The project is financed from the fund of South-East Europe (SEE);

- HAZADR project aims to address concrete problems and needs identified in existing European policies and strategies on sea protection, while at national and regional level it is based on an analysis of the level of preparedness of project partners. Financing by IPA Adriatic Programme;

- INTERMODAL project aims to share sustainable mobility models based on intermodal transport to promote tourism in the Adriatic littoral zone. Project deals with shared definition & implementation of a pilot integrated transport system making urban mobility sustainable and answering each areas needs;

- EA SEA WAY Project aims to improve the accessibility and the mobility of passengers across the Adriatic area and its hinterland, through the development of new cross-border (CB), sustainable and integrated transport services and through the improvement of the infrastructures linked to the provided services.

Case Study 8: The Belgrade case study, Serbia

3.8.7 Case study description

Due to construction works on the right bank of river "Sava" in the city Centre, within one of biggest projects in last few decades called "Belgrade Waterfront", the railway central station is moved, and bus station will be moved after completing of new central bus station in next 12 to 18 months. Before this construction works, central railway and bus stations were next to each other. By actual moving of those central stations, planned new locations are distant. Passengers who changes mode of transport are and will be in situation to use city public transport in order to transfer from railway to intercity or international bus lines and vice versa.

After movement of central bus station situation will be better, where existing urban railway lines connecting two central stations, with recognizes the need of upgrading existing second railway station next to future central bus station. Still, south and east part of the City will be far from central bus station and it could be expected strongest request of bus operators to use bus stop point at "Autokomanda" highway junction, causing higher congestion at this micro-location, already recognized.

Furthermore, actual new central railway station needs to be better connected with city public transport and probably needs some construction works on street network in order to enable better connectivity to various bus, tram and trolleybus sub-systems.

Based on the need for relocation of railway and bus station, the case study official name should be *Effects of movement of central bus and rail stations*. The overall objective of the project would be to investigate the impact of the relocation of the main railway and bus station to new locations, the Railway Station Belgrade Center (Prokop) and the Bus Station Novi Beograd (Block 42). A special review when exploring the impact of displacement should be given to the possibility of using intermodal passenger transport and promoting the use of the city rail and inter-city and international railway lines. The results obtained by research in the Inter-Connect study (Intermodality Promotion and Rail Renaissance in Adriatic - Ionian Region, Project number 338) will be used as the starting point for exploring the impact of the station relocation.

Table 120: Pilot development phases' descriptions.

Pilot phases	Pilot phases	Brief description of each phase
Phase 1	***Concept definition***	The purpose of the case study is to get first inputs and create the concept for further detailed analysis of effects of movement of two main nodes - central Railway and central intercity/international Bus Station. The Inter-Connect project resources and scope are not wide enough to complete the following phases and in this phase it will be only highlighted elements for further activities which will have to be taken into consideration for implementation in following phases.
Phase 2	***Pre-feasibility study***	Pre-feasibility study should be conducted based on concept definition given through outputs of Inter-Connect project. This phase should include detailed research on local, national and international passenger flows. Inter-Connect Belgrade Case examination plan defined concept relations on International flows and Belgrade catchment area, but local passenger flows are analysed on situation before the movement central Railway station, while movement of Bus station is not started yet. After completion of movement of both stations, pre-feasibility study should give the answers on real needs and benefits of reorganization and optimisation of existing Belgrade Public Transport system and lines.

Phase 3	***Feasibility study***	It is the project evaluation and approval phase. It means there is a technical study presenting enough information to determine whether or not the project should be advanced and implemented. This is a "go/no-go" decision. This step should give the answers to the political and social decision on "green light" to get into the process of reorganization and optimization of Belgrade Public Transport system and its subsystems based on comprehensive and very detailed research on all passenger flows, including detailed cost/benefit analysis, social, economic and environmental effects, required investments and funds, as well as funding sources. This phase also should define implementation phases, detail planning of implementation and dynamics and milestones. Pre-feasibility study should be completed as a separate project in next two years, and should follow announced movement of central Bus station and realization of Belgrade Transport Master plan "Smart Plan". Moreover, plans for construction of new and reconstruction of existing city railway lines and plans for construction of Belgrade Metro system should be included into analysis of Feasibility study. Regarding that planned construction activities as well as movement of central Bus station is still not activated, time framework for this feasibility study is estimated for next 2 to 5 years.
Phase 4	***Project implementation***	Project implementation can be expected in next 5 to 7 years. However, depending on final decisions at political and social level related to implementation of Belgrade Metro System and final date of Belgrade central Bus Station movement, implementation of optimization of Public Transit lines can be completed in smaller extent related only to lines passing next to existing passenger transport nodes in Belgrade. However, having in mind that any change done at limited area can affect other public transit subsystems in Belgrade, where construction works are on-going, it almost impossible to assess or predict if those limited changes can bring the expected benefits or not. Except of unknown period for construction of new Belgrade central bus station, plans for railway connection of Belgrade airport and interconnections to Belgrade railway lines, will affect real situation and further decisions.
Phase 5	***Operation & maintenance***	Operation and maintenance phase is expected in the time framework of next 3 to 10 years, depending on decision if the elements of Belgrade Master Transport plan and different phases will be started as planned. It mostly depends on funding sources availability.

Table 121: Phases' description

Phases	Year (real or foreseen)	Brief description
Phase 1. Concept definition	2020	The main outcome of the Case study should be the definition of the follow-up project for re-organization of Inner-city transit lines in the way to ensure better connections between railway and bus stations and enable future railway connections to Belgrade airport, aiming to establish the base for intermodal sustainable public transport solutions. The purpose of the case study is to get predefined indicators and compare them with the indicators obtained in the study mentioned in the preceding paragraph. The project should provide a proposal for a periodicity of conducting research and comparison with previous studies to assess the impact of intermodal passenger transport and the promotion of the use of rail transport. Having in mind the resources and scope of Inter-Connect project, as well as defined activities, the concept definition will be the only phase covered by deliverables of Inter-Connect at local level. It should give guidelines and some examples of analysis done at limited data sample, as the concept for further projects which should be encompassed.
Phase 2. Pre-feasibility study	2021	Creating the models of trip generation based on new railway network concept defined in Belgrade Transport Master Plan "Smart-Plan" including attraction of

		new locations of central railway and bus stations, second railway station near to new bus station, enabled railway communication to Belgrade airport and construction of 2 base metro lines. Pre-feasibility study should give the answers on effectiveness of existing city bus and tram lines, proposals for avoiding overlapping with other modes of transport and possibility of establishing feeding lines.
Phase 3. Feasibility study	2021/2022	Feasibility study should conduct deeper research on sustainability components of City bus and tramway network in new infrastructural and social surrounding.
Phase 4. Project implementation phase		Project implementation phase is strongly dependent on development of existing plans and monitoring of lines of attraction and traveling (commuting and daily migration) and its changes affected by movement of central bus and railway stations as well as effects of railway infrastructure investment period foreseen for period 2020-2023 at the level of entire Serbian railway network including Belgrade node. The results of pre-feasibility and feasibility studies should show and guide development process and solutions to be implemented. However, implementation is proposed through several sub-phases: • Optimisation of Bus and Tram lines in terms of unwanted overlapping and better distribution of lines to cower as wider as possible City territory for better connectivity of two stations • After completion of actual railway works at Belgrade – Novi Sad direction, implementation of frequent inner-city railway line connecting the two stations and few more attractive points in the city.
Phase 5. **Operation & maintenance phase**		/

Phase 1. Concept definition

Concept definition for Belgrade Case Study is given through analysis conducted based on data provided by Secretariat for Public Transport of the City of Belgrade. Regarding that data from electronic ticketing system are not available, analysis is based on Belgrade Traffic Passenger Counting project done in 2014. In that terms, the analysis shown below presenting the concept or idea how the data can be analysed and used for public traffic lines optimisation, once when movement and construction of central bus and railway stations is completed. From that moment, new data on passenger flows are required which can be obtained through pre-feasibility or feasibility study of new, follow-up project.

Passenger's traffic data were provided by one of the stakeholders of the project - Secretariat for Public transport. On the basis of the submitted data, the analysis was carried out and activities of the study were defined, which should provide the answer how the relocation of the stations influenced the state of intermodal passenger transport.

First of all, it is necessary to define the technology of counting passengers in the system of public urban transport of passengers. The data that are necessary before counting are the total number of public passenger transport lines of all modes of transport, as well as the definition of the total number of stops for all modes of transport.

Considering the computational mobility of passengers at the level of the complete JGPP system, it is necessary to define the counting technology and the choice of the relevant period of the year. The form of counting passengers as output data must at least have the data defined in the form (Figure 98). Output data is the total number of passengers who used JGPP vehicles during one day. This figure will be taken as the total number of passengers at the daily level in relation to which the indicators will be counted.

	Стајалиште/Stop: Broj/Number - Naziv stajališta/Stop name	Linija/Line number	Smer/Direction	Datum brojanja/Date of counting	Broj ulazaka po stajalištu na dan / Number of passengers boardings on stop per day
Primer/Example	Стајалиште/Stop: 1016 - Сердара Јанка Вукотића	59	Смер Б	24.11.2014	375

Figure 97: Form of counting passengers

Counting of passengers took place in October, November and December 2014. On the basis of the obtained counting data it is possible to get a picture of the passengers transport needs in Belgrade. The available data are: the number of entries and departures of passengers in all routes, for both directions, all lines during the day by hour. At the moment of counting, the main railway and bus stations were at the places from which they were planned to be relocated.
Detailed data processing, a base of counting passengers was obtained. One of the goals of data processing was to get a picture of the positions with the highest number of entries in JGPP vehicles – stops that have the greatest demands. Since the counting of all the stops and all lines at the level of days per hour was too complicated to organize in one day, counting was done in total 28 days, from October 29, 2014 to December 8, 2014. Data which shows the number of entry points are not counted for each bus stop every day, so it was used count of the largest number of passengers that was recorded in one day. Counting was done at 2,693 stops, for about 170 lines of city transport.

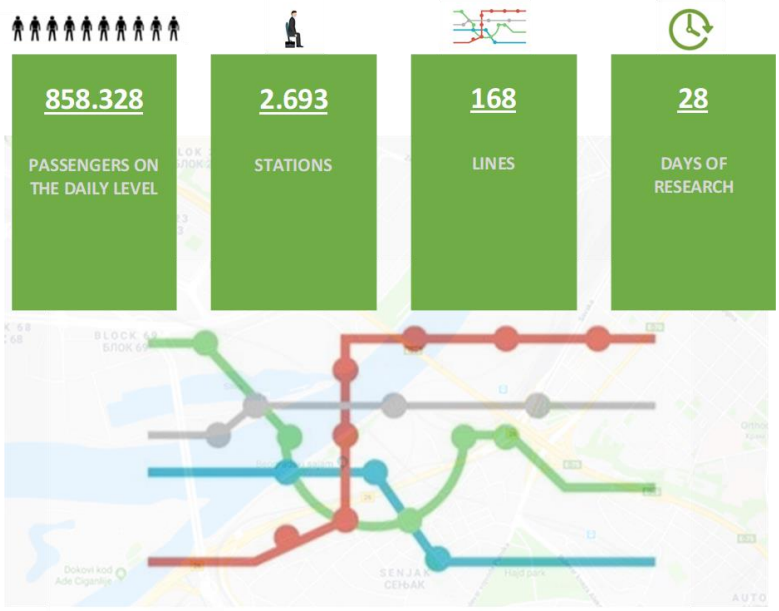


Figure 98: Case study data - 2014 counting

Based on the defined total number of lines and their routes, it is necessary to isolate those lines of city transport that provide the possibility for the system user to directly, without interception, reach the Bus Station Novi Beograd (Figure 100) and Railway Station Center (Figure 101).

BUS station Novi Beograd

Type of public transport	The number of direct lines to the main bus station	The number of overlapping lines	Number of mutual stops
	60		
	67		
	94		
	95		

	E1
	E6
	7
	9
	11L
	12L
	BG VOZ-1
	-

Figure 99: Lines that lead directly to BUS station Novi Beograd

Train station Prokop

Type of public transport	The number of direct lines to the main train station	The number of overlapping lines	Number of mutual stops
	34		
	36		
	38		
	44		
	-		
	-		
	-		
	-		
	-		
	-		
	BG VOZ-1		
	BG VOZ-2		
	40		

Figure 100: Lines that lead directly to TRAIN station Prokop

By counting passenger entries at all stops, it was counted that total 858,328 passengers entered the public transport vehicles. By analysing the demands of the passengers, over 80% (686,787) passengers entered the 791 stops, which represents about 30% of the total number of stops in the urban transport system. At the time of counting, the number of lines, directly passing by the main railway and bus station was 14, eleven bus lines and three tram lines.
Further data processing involved creating a base line that overlaps with lines leading directly to the main train and bus station. The obtained data corresponds to the view - if we can reach from one part of the city to the desired destination with one transfer only, the area can be considered to be a well-covered network of city transport lines (Figure 102).

Type of	**The number of direct**	**The number of**	**Number of mutual**

public transport	lines to the main train and bus station	overlapping lines	stops
	46	36	121
	51	35	256
	511	31	140
	551	28	127
	552	27	122
	553	27	120
	601	32	254
	91	28	132
	92	29	132
	78	54	326
	83	94	247
	2	21	85
	7	25	150
	9L	94	175

Figure 101: Lines that lead directly to

The number of stops from which it is possible to enter the line leading directly to the main railway and bus station is 419 stops (Figure 103). The total number of lines overlapping from the mentioned 14 lines directly to the main train and bus station is 113, representing over 70% of the total number of lines (Figure 104).

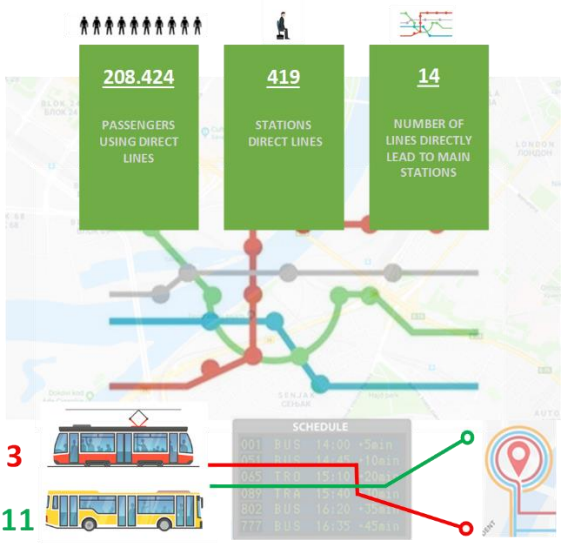


Figure 102: Direct lines that lead directly to BUS and TRAIN station - 2014

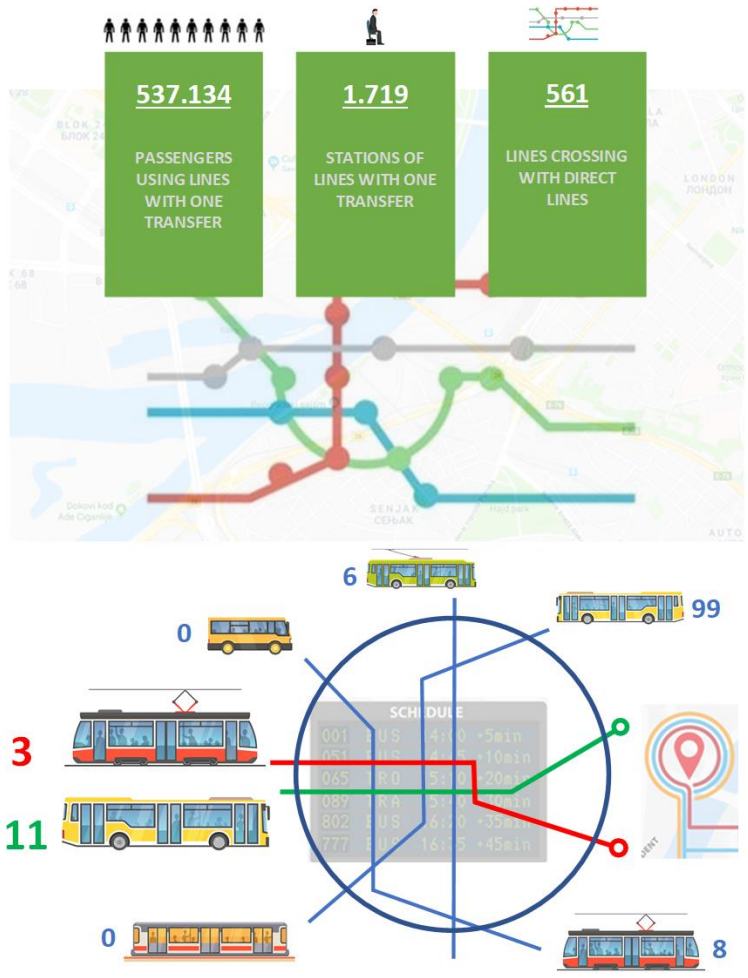


Figure 103: Direct and lines with one transfer that lead to BUS and TRAIN station - 2014

If the obtained data of the most requested stops (the highest number of entries) is compared with the number of routes directly leading to the main railway and bus station, it is estimated that from 791 stops with only 194 stops it is possible to reach some city transport route directly to the main train and bus station.

Considering the number of passengers who entered these stops, we get the information that a total of 184,257 passengers (slightly over 21%) would have the possibility of direct transport to the main train and bus station. Given the total number of stops in the city transport system, 194 stops represent about 7% of stops (Figure 105).

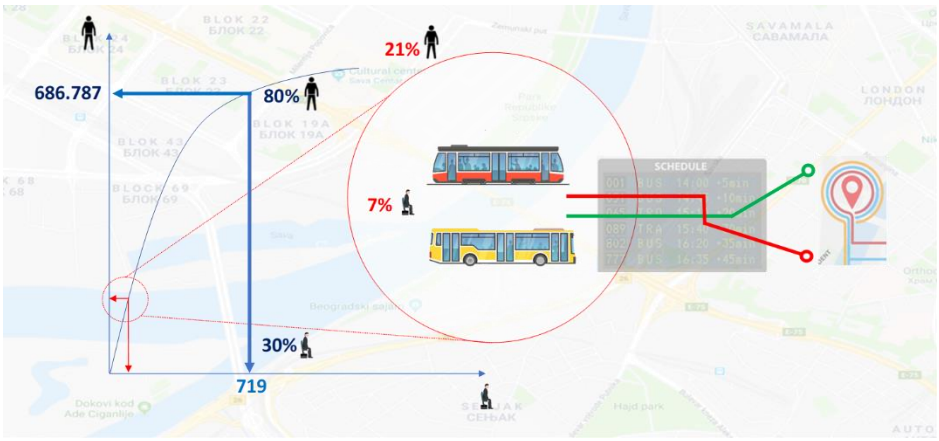


Figure 104:Analysis of the number of passengers by points (pareto) - 2014

As the main indicators of the study it is necessary to separate:

- Percentage of users who can directly reach the train station
- Percentage of users who can reach the bus station in a pirated way
- Percentage of users who can reach a one-stop train station
- Percentage of users who can reach a bus station with one stop
- Percentage of overlapping of city rail lines with other forms of public transport

On the basis of the obtained indicators it is necessary to give an overview of the effects that the switching stations had on the intermodal transport of passenger's.

3.8.8 Stakeholders engagement

Main stakeholders identified for this Belgrade Case Study are two relevant local competent authority institutions: Secretariat for Public Transport of City of Belgrade, as the place where all decisions related to public transport lines and their operation are meant to be done, as well as Secretariat for Transport of City of Belgrade, where all decisions related to planning documentation, infrastructure projects and conditions for further development of comprehensive transport system of Belgrade are analysed.
Third very important stakeholder is Belgrade Railway Node Public Company, which is responsible for development of Railway sub-system in the City of Belgrade.
Moreover, bus transport operators are very important group of stakeholders, where Traffic Company "Lasta" is recognized as main representative of this group as one of largest companies operating in bus sub-system of Belgrade Public Transport System.
All of main stakeholders listed above are involved in project activities, but what is recognized, there is a lack of coordination and cooperation among them. Also, bus operators are reserved to development of intermodal system and higher share of railway in total volume of transported passengers in Belgrade area.

Main public and private stakeholders involved

Following table closer describe the main stakeholders involved and their role in Inter-Connect Belgrade Case action.

Table 122: Stakeholders involved in the case study

Type of stakeholder	Stakeholders and brief description	Role in the case study
Public authority / decision makers Local authority	• City of Belgrade - Secretariat for public transport • City of Belgrade - Secretariat for transport	• Project beneficiary • Project developer / supervisory body
Railway infrastructure manager (public)	• Belgrade Railway Node JSC	• Main project stakeholder
Public and private bus operators	• Traffic Company "Lasta" JSC	• Project stakeholders
Public	• Transportlog – association of Transport managers	• Testing/monitoring (Associated partner)

Engagement levels

The level of stakeholders' commitment increase with the responsibility it is given to them. Higher commitments mean better results but also higher expectations from the stakeholders.

Table 123: Level of engagement of stakeholders

Stakeholder	Level of commitment	Brief description of the commitment level
City of Belgrade - Secretariat for public transport	Consult to Collaborate. One or more among: Inform, consult, collaborate, empower	Even we tried to involve this stakeholder deeper, the lack of resources and work overload of personnel and officers prevented full involvement Secretariat for Public Transport provided all data necessary for analysis and participated to meetings and Round Tables but didn't show any further feedback.
City of Belgrade - Secretariat for transport	Consult to Collaborate.	Even we tried to involve this stakeholder deeper, the lack of resources and work overload of personnel and officers prevented full involvement. Stakeholder participated at meetings and Round Tables, but with often changes in views, level of interest and officers who participated.
Belgrade Railway Node JSC	Consult to Collaborate	Stakeholder participated actively, discussed and contributed to project activities. But, in terms of core responsibilities and relations to national government and dependency on national railway infrastructure company at decision making level, stakeholder couldn't fully collaborate in terms of taking responsibilities.
Traffic Company "Lasta" JSC	Consult	Consulted in terms of opinions, issues and acceptance of concept of intermodality for Bus operators and their position and role in further development of Belgrade Transport system.
Transportlog – association of Transport Managers	Consult	Consulted in terms of professional opinions, issues and possibilities to intervene. This stakeholder actually defined and proposed Belgrade Case

		within Inter-Connect and monitoring of activities was main role as Associated Partner

Stakeholders influence-interests matrix

After stakeholder's identification phase, the relationships between these actors is analysed.
For the deeper analysis of inter-relations, possible synergies or conflicts of stakeholders, the Influence-Interest Matrix is used. The explanation of the Matrix and stakeholder's position are shown in tables below.

Table 124: Influence-interest matrix. Source: UN-Habit

	Low Influence	High influence
Low stake		Transportlog – Association of Transport Managers
High stake	Traffic Company "Lasta" JSC	City of Belgrade - Secretariat for public transport City of Belgrade - Secretariat for transport Belgrade Railway Node JSC

The main characteristic of most important stakeholders – two secretariats under the City government of Belgrade, is that lack of resources, lack of coordination and cooperation – internal and external were recognized. Having in mind position of stakeholders in influence-interest matrix as well as mentioned lack of cooperation and communication among them including reserved position of Bus operators, there is a more and less conflicted position and confronted position of interest as well as mismatched level of interest. This differences in positions and level of interests were expressed especially during joint meetings – Round Tables and tried to be managed through bilateral meetings held with Secretariat for Public Transport of City government of Belgrade. However, lack of personnel and experienced officers due to constant work overload, lack of decision makers at the meetings still need to be overcome in terms of implementation of Inter-Connect activities.
It is important to highlight, that there is no direct confrontation among stakeholders or direct expression on lack if interests for Inter-Connect project activities and outputs, but just the inability to better understand main goals and involve more deeply in terms of taking the responsibility for implementation, prevented by lack of resources in the first row. All involved stakeholders gave the support to project activities and stated that this kind of actions should be more welcomed by decision makers and policy creators.
On the other side, stakeholders criticized the Serbian partner and Inter-Connect project in general for missing to involve stakeholders in preparation phase and defining main goals and expected results.
However, all of stakeholders expressed the need for better, deeper and more active cooperation, where only reserved position was on signing of Memorandum of Understanding, which still needs to be approved by higher level decision makers, even in general MoU was positively assessed.

Engagement Strategies

One aspect to be addressed is the means of engaging stakeholders to improve the efficiency and effectiveness of their involvement and to avoid disputes. There are several specific techniques for achieving stakeholder participation.
In the table below presented, there is a short list and brief description of used techniques for involvement of stakeholders.

Table 125: Engagement strategies

Engagement strategies	Do you use this strategy in your case study? (Yes/No)	Brief description of the engagement strategy used
Invitation Letters	Yes	Official letters signed and sent by high

		level representatives of named institutions/stakehlders.
Questionnaires and Surveys	Yes	The stakeholders were included in all surveys Inter-Connect project was launching, both on transnational and local level.
Exhibitions and Road Shows	no	
Public Meetings	no	
Use of the full range of the media	no	
Structured interviews	Yes	Bilateral meetings with all stakeholders were held, in purpose to complete structured interviews, aiming to collect information and data required for analysis
Forums	no	
Focus Groups	no	
Advisory Committee	no	
Workshop	no	
Round Table Discussions	Yes	Two round tables held, aiming to involve the stakeholders
Public-private agreement	no	
Participatory processes	no	
Others (please add)	/	

The key message and lesson learnt is that more effective involvement of stakeholders should be gained even in project preparation phase.

3.8.9 Institutional and Political Sustainability

This paragraph analyses the policies and governance schemes supporting the Inter-Connect case studies definition and/or implementation and management.

Main national and regional policies supporting the case studies

Main strategic document supporting the case study is Belgrade Transport Master Plan, called “Smart Plan”.

Governance scheme adopted

Main governance scheme for implementation of project follow-up the Inter-Connect project’s Belgrade Case Study is competent authority – City of Belgrade.
The Case Study itself representing basic analysis as an example for Concept Definition and guide or idea for higher range follow up project and in that terms it doesn’t need governance scheme to be adopted or implemented.

3.8.10 Financial Sustainability

This paragraph collects quantitative and qualitative information on financial sustainability of the Inter-Connect case studies. The aim of the financial sustainability analysis carried out in this chapter is to evaluate if the Inter-Connect pilots are/will be supported by a strong and replicable business model.

General information on the case study’s financial scheme

Having in mind that case is covering actual situation and trying to find solutions at the level of follow-up project proposal, as well as that case is dealing mostly with organizational issues and reorganization of city transit lines as set of soft measures, investment is not capital and it is possible to be funded by internal resources of city of Belgrade. At the first place, this kind of project should be implemented as the official City budget line.

On the other side, regarding that beside Inter-Connect and CCIS as a partner, there are more than one possibility of using some of EU funds or on-going projects (Research, Mobility, Smart Cities etc.) to co-fund this follow-up.

Case study's general costs

Table 126: Case study's general costs

Cost	Quantification (€)	Notes
Total investment required in € (approximately)	0.5 to 1 million	Depending on final decision on scope of the project
Foreseen investment duration (years)	3 to 5	From the start, which can be expected in 2021 the soonest

Table 127: Investments required per phases

Investments required per phases	%	Notes
Phase 1. Concept definition	0 %	Concept (including base for methodology, objectives and expected results) is mostly done through activities and outputs of Inter-Connect project
Phase 2. Pre-feasibility study	5 %	This element should research and confirm or update the Concept and give the basic answers on necessity of the project.
Phase 3. Feasibility study	15 %	During this step, comprehensive basic research should be completed.
Phase 4. Project implementation	80 %	Detailed research of all flows, lines, number of passengers, lines of desire, surveys and deep analysis of current and future wanted situation, reorganization of work, new time tables, new organization of work of crews, upgrade of pricing and ticketing system, implementation of ICT solutions, better visibility of information …
Phase 5. Operation & maintenance	0 %	This phase should be funded as regular, improved transport system
Total	100%	

Expected economic resources and their duration

This paragraph intends to map the economic resources supporting the definition and/or the implementation of the Inter-Connect case studies.

Table 128: Expected economic resources

Kind of funds	Availability and date of availability	State of the financing	Duration	Brief description
European funds	NO	Foreseen request	3 to 5 years	If there are possibilities
National funds	NO	Foreseen request	3 to 5 years	Discussion for Belgrade City budget for 2021

Regional funds	NO		/	/
Private funds	NO	/	/	/
Subsidies/Incentives	NO	/	/	/
Internal/own economic resources	NO	/	/	/
Others	/	/	/	/

The total quota of the total project costs (as indicated in the 5.2 paragraph) should be covered by internal economic resources of City of Belgrade. In case that any EU funded programme call will be available and eligible to apply, it should be used.

Revenues streams/internal economic resources

Having in mind time framework, scope and strategic position of this conceptual definition, it is impossible to estimate the financial effects. This will be the main task of Pre-feasibility and Feasibility studies foreseen by this Concept defined within Inter-Connect activities.

Table 129: Foreseen revenues streams/internal economic resources

Revenues streams	€ (Estimation)	Description
Public transport tickets sales	/	
Advertising	/	
Concessions to private operator(s)	/	
External economic collaborations	/	
Others	/	

Case study's financial soundness

Even previous sub-chapter explained that this pilot cannot be developed through implementation steps due to scope and comprehensive research which Inter-Connect cannot support, rough estimation of financial risk levels will be provided.

Table 130: Financial risk levels for each phase of the project

Project phases	Financial risk levels	Description
Phase 1. Concept definition	Low	Competed by EU sources (Inter-Connect)
Phase 2. Pre-feasibility study	Low	Pre-feasibility study costs are not high
Phase 3. Feasibility study	Medium	The risk should be taken into consideration in case that results shows negative estimation of feasibility.
Phase 4. Project implementation	High	Main costs of research and implementation

		phase are here. The risk possibility is very low, but still severity of loss of funds is high.
Phase 5. Operation & maintenance	Low	In case of expected successful implementation, all operation and maintenance costs will be transferred to infrastructure and operations managers, who

3.8.11 Technical Sustainability and intermodality promotion

The Belgrade Inter-Connect's case study aiming to highlight effects of recent and future planning crucial changes shaping the new conceptual and functional structure of the City of Belgrade. The Case is based on first step of changes by construction works in the City Centre, where old part of the city on the right bank of Sava River is totally reconstructed, causing the closure of old Railway tracks and movement of central Railway station to new location. Next, expected in near future is the movement of central bus station to new location which is not at the same location as new railway station.
Connection and commuting between those two new nodes can bring certain issues in terms of changeover between road and rail, but in the same time it's a new possibility and opportunity for introduction of intermodal passenger transport of great potential.
In terms of Technical sustainability, it means that through construction of new facilities, there can be introduced a series of new solutions, from ICT data collection and sharing, to functional infrastructural solutions.
But, having in mind the limited resources of Inter-Connect project, the main objective of the Case Study is to show, highlight and give an example how to approach to the intermodality promotion and what and how can be affected through organizational changes of existing public transport system aiming to enable better local and inter-city connections as well as regional and transnational intermodal journeys.

Enabling technologies

The Belgrade Case study is not meant to directly enable new technologies but, possibilities through foreseen structural changes and proposed adaptation and optimisation measures and guidelines easily can be supported by implementation of such technologies which will be mentioned here.

Table 131: Enabling technologies for the case study

Enabling technologies	Brief description of the technology and the role in the case study
Example: Smart ticketing	TRL 0. Electronic ticketing system for public transport in Belgrade already exists. However, integration of that system with inter-city and international bus and railway connections as well as transfers from/to Belgrade airport, together with enabling integration with special business or cultural events should be considered.
Example: Big data analysis tool	TRL 1. Preconditions for big data analysis are mostly completed. Electronic ticketing system can provide a huge database on passenger behaviour and lines of desire, as well as on load level of certain public transport lines. Unfortunately, those data are not used properly or not used at all. Competent authorities still creating analysis based on passenger counting project done back to 2014, which should be improved.
Example: New trains technologies	TRL 2. New train technologies are not the topic of Case Study, but Belgrade Transport Master Plan as well as political statements we can hear nowadays, showing the clear vision of introducing the Belgrade Metro system which will connect and integrate existing Railway line and stations.

Case studies contributions to intermodality promotion and environemtnal impacts reduction

Regarding that Inter-Connect Belgrade Case Study is not reaching the implementation nor feasibility study level, here we will show only expected/foreseen direct contributions to intermodality and environmental impacts reduction.

Table 132: Key technical KPs

Indicator	Indicators	Data (real data if available or estimated/expected)
Transport modes integrated	Number and mode (train, bus, ship, ferry, airplane, bikes, etc.)	Train, bus and local public transport sub-systems.
MaaS approach	YES/NO	No
Foreseen users	Number	At least 200.000 according to concept analysis in chapter "Concept definition"
Traffic reduction* **Pollution reduction***	% or Co2 emissions	By direct train connection between two future stations, it is expected that at least 30% of passengers stop using current bus lines, which can be estimated in reduction of bus-km at those lines for 50 per day. Comparing to current situation it is estimated that traffic and pollution reduction can be achieved for 10-20%. (based on expert's opinion)
Timetable integrations	YES/NO	Yes. Integration of Inter-city and transnational, as well as local transport time tables can and should be integrated.
App for final users	YES/NO	Possible.

3.8.12 Other materials and contacts

Main contacts of the main stakeholders related to this case study are:

a) Consultant engaged for this Case Study: Intico doo, Belgrade (office@intoco.rs)
b) Associated Partner who proposed the Case Study: Transport and Logistics Managers Association TRANSPORTLOG (office@transportlog.org.rs)
c) City of Belgrade – Secretariat for Transport, Sector for Planning documentation (gordana.markovic@beograd.gov.rs)
d) Sity of Belgrade – Secretariat for Public Transport, without permition contacts to be published in final deliverable. Contacts will be published at official web page of Inter-Connect project.
e) Joint Stock Company „Belgrade Railway Node", local railway infrastrucutre manager. Without permition contacts to be published in final deliverable. Contacts will be published at official web page of Inter-Connect project.
f) Traffic Company „Lasta", bus operator. Without permition contacts to be published in final deliverable. Contacts will be published at official web page of Inter-Connect project.

4 Conclusions

The Inter-Connect project pursues the promotion of integrated sustainable transport and the reduction of bottlenecks in public transport infrastructures, all by increasing the capacity of existing transport services and promoting integrated and connected solutions across the Adriatic and Ionian sea.
The common results obtained within the case studies development and analysis phase are further analysed and assessed in the report DT2.4.1 (Transferring Protocol) and DT2.4.2 (Cases key generalized messages) related to the Inter-Connect main results transferability analysis and definition of the implications for future actions in the Adrion Level aimed to guide authorities and stakeholders on the incorporation of the project's cases' examination main results into policies, through formulating draft agreements for passengers' intermodal and rail transport promotion.

4.1 The financial, political and institutional sustainability of the Inter-Connect rail and maritime intermodality promotion actions: the results arose

The results obtained within the Inter-Connect project showed that the common objectives pursued, both at national and regional levels, concern the following aspects:

- promotion of more attractive public transport services capable of involving an increasing number of users (both commuters and tourists);
- creation of hub to hub connections between railways, ports and bus stations;
- creation of integrated fares systems and ticketing for tourists in order to facilitate the intermodal solutions both for passengers and tourists;
- soft and technological solutions aimed to improve the railway network without major investments;
- improvement of the real-time information and timetable integration.

The achievement of these objectives to promote rail and maritime intermodality within the ADRION regions is possible only if the financial, political and institutional sustainability of projects are guaranteed. There are different solutions in order to build solid and durable projects as evidenced in the single Inter-Connect case studies.
The analysis of the Inter-Connect case studies shows that one of the fundamental prerequisites for the success of an intermodal transport strategy is the level of integration with existing national, regional and local policies. This integration must be achieved through strategic plans that aim to improve accessibility to all the territories, considering not only the transport dimensions but also the role of transport in sustaining local economies and people equity (in particular in relation to elderly people).
One of the most important political support for the promotion of sustainable transport solutions, as evidence in the case studies analysed, are the Sustainable Urban Mobility Plans (SUMP) whose main objective is to satisfy the varied demand for mobility of people and businesses in urban and peri-urban areas to improve the quality of life in cities. The added value of SUMP is related to the possibility to integrate the others existing planning tools (not only related to transport), to allow a better participatory process in the policy making processes and to better monitor and evaluate the implemented measures. When the required action operates at wider geographical scales (regional or national), as evidenced in the Slovenian case, it is necessary to go beyond the SUMPs and planning a wide participatory process involving actively national, regional and local organizations. But this is not only the case of Slovenian case study. In all the Inter-Connect pilot cases it has been found that the creation of an intermodal public transport strongly depends on the collaboration between several interested stakeholders (both public and private) in order to offer new efficient and attractive services for users. Without these wide collaboration networks it is impossible to promote reliable and attractive

train and ship services for tourists and local population. For this reason one of the main output of the Inter-Connect project is related to the definition of Memorandum of Understanding among local partners aimed to activate collaborations and operational schemes between local, regional and national operators in order to extend the transport network and improve intermodal solutions.
Good collaborations required an efficient and clear governance scheme. A good governance scheme allows to share the political and technical responsibilities among the different stakeholders and allow to share a common action plan. An example is the case of Emilia-Romagna case study, where the governance scheme adopted see a clear competences sharing among regional authorities, national rail operator and the local bus operators in order to create a common integrated ticket valid for all the public transport services operating at regional level. In this case there is not a technological innovation but a governance innovation related to a written agreement among different public transport operators in operating a common service with a single ticket.
From the financial point of view, all the case studies are mainly based on public investments deriving from different EU, national and regional sources. The financial analysis of the case studies revealed that, without public funds available, the actions envisaged by the Inter-Connect project are difficult to achieve since many of these involve relevant investments not always available.
As can be seen in the Greek and Montenegrin cases, the financing needs of investments for sustainable mobility exceed the available resources. But as evidenced in the case studies where bigger investments are required, when a solid and precise business model is developed, with an accurate evaluation of the potential revenues, can help in overcoming these financing problems. Others case studies, as for example the Emilia-Romagna integrated ticket, show as also low-cost soft solutions could be activated waiting for bigger infrastructural investments.
The measures analysed in the Inter-Connect project focuses on interventions both relating to the infrastructures improvements and soft improvements more related to operational and organizational aspects. The Inter-Connect case studies shown as isolated interventions on the infrastructure not always have a great impact on increase of passengers (both tourists and local population) if they are not accompanied by synergies with the user needs and others relevant planning and political processes. As evidenced in Croatian and Friuli-Venezia-Giulia case studies, a strategical approach is required in order to reach ambitious targets.

4.2 Main lessons learnt

All the case studies analyzed in the Inter-Connect project shown as private car is still the first transport solution both for tourists and the major part of commuters (mainly for the commuters living outside the main cities in the rural areas).

Each case study work develop different soft solutions aimed to increase the attractiveness of the public transport by increasing the travel comfort, reducing the travel time, improve the main interchange hubs, improving the public transport offer and quality and so on. Different solutions for the same problem: increase the number of people using public transport in order to reduce the negative externalities related to the usage of cars.
The main problems tackled by the Inter-Connect case studies are:

- Perceived low level of public transport services (in terms of service quality, network coverage, reliability);
- Lack of reliable, real time and integrated information for final users on the different transport solutions (e.g. integrated tickets and timetables, etc.);
- Seasonal problems related to the increase of public transport demand during specific periods. During these peak periods it is possible to register conflicts among tourists and commuters' transport needs;
- Low connectivity between different intermodal hubs (bus-train nodes and port hubs with the rest of the urban area);
- Long time required to implement the required investments aimed to improve the public transport infrastructures (more efficient train lines infrastructures, etc.);

- Low level of participation of the main stakeholders (in particular private companies) in the definition and implementation of new sustainable public transport solutions.

The Inter-Connect case studies assessment shown as urban/local problems and weaknesses in public transport provision as a relevant impact on a national and transnational level. For example, port hubs not adequately linked with the main public transport hubs (train stations, international bus stations, etc.) reduced the possibility to offer integrated and more sustainable travel solutions at cross-boarders level. For this reason, it is fundamental to work on these political and technical aspects at local/urban level in order to promote better accessibility and sustainable connections at ADRION level.

Thanks to the analysis carried out in the previous chapters, valuable strategies and soft solutions have been analyzed in order to improve public transport services without the need of big investments. The key soft solutions founded in the Inter-connect project in order to improve intermodality and sustainable public transport are:

- better planning of interchanges among local/urban public transport hubs;
- timetables integrations;
- real time information systems;
- better information systems for final users (dedicated app, etc.);
- a comprehensive public transport systems integrated also with cycling and walking networks;
- integrated ticketing and e-ticketing;
- on-demand public transport solutions.

As shown in the Croatian, Montenegrin and Slovenian case studies for example, real-time information, accessible to everyone (also in foreign languages), easy to understand and collected in a single place (e.g. websites regularly updated, dedicated app, etc.). The information to be provided to final users have to be not only related to timetable or real time data, but also to the ticketing and fare systems. Often it is not easy for a tourist to understand the different fare system and rules operating in the different countries.

In relation to this topic first of all it is important to simplify the public transport fares systems and provide in a more easy way all the relevant information to final users. This is a first step for a public transport better promotion. The second step is related to define and implement integrated ticketing system using a Mobility as a Service (Maas) approach. The Emilia-Romagna Region case study is a valid example that shows the importance of integrated ticketing to promote public transport (train and bus) making public transport more attractive and easy to use for tourists.

When considering the ADRION region, it is evident as problems related to intermodality are not only related to inland transports but also to maritime connections. As evidenced in almost all the Inter-Connect case studies, it is essential to improve the integration among inland and sea transport services. This require to work on strengthen the connections at regional and urban level, focusing on create new links and/or improve existing one among port hub and main train and bus stations. All these interchange hubs have to be improved in order to guarantee high service and quality standards.

At the infrastructural level, the improvement of existing infrastructures (mainly train infrastructures) is a key aspect for the promotion of better connections and in order to have more tourists and commuters using public transport. As evidence for example in the Serbian, Emilia-Romagna and Albanian case studies, when big investment in infrastructures are not available in the short term, it is possible to start working on soft solutions able to improve the existing services and provide them in a more efficient way.

Finally it is necessary also to work more on cross boarder public transport connections, both by train and ships. As evidenced in the Trieste and Croatian case studies it is possible to plan new cross boarder services. These services in ADRION areas are very weak, the demand not always is so relevant to justify such measures. But as evidenced in the Inter-Connect case studies, it is fundamental to create cross boarder train and ship services and to better connect the main train and port hubs with the existing inland and urban public transport networks. The Inter-Connect project, as evidenced in this report and in the following report 2.4, provide some evidences on how this important challenge at ADRION level can be addressed.