



ANNEX

AG4 DISCUSSION PAPER ON SECONDARY NETWORKS IN THE ALPINE REGION

Contributions from AG4
Members concerning good
practice examples



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INTRODUCTION

Transport Infrastructure in EUSALP Member Regions

Descriptions of the status of transport infrastructure has been delivered by Slovenia and Trentino:

Slovenia

The Republic of Slovenia lies at the heart of Europe where the Alps and the Mediterranean meet the Pannonian plains. To the north is Austria, to the east Hungary, to the southeast Croatia, and to the west Italy. Two million (2.062.455; September 2014) people live here on just 20,271 km². Its land border equals to 1,322 km (with Austria 318 km, with Italy 232 km, with Hungary 100 km and with Croatia 672 km). Slovenian length of coastline is 47 km.

There are three different types of climate in Slovenia: continental in the central part, Alpine in the north-west and sub-Mediterranean along the coast and its hinterland.

Approximately one third of the population lives in towns with more than 10,000 inhabitants, while the rest live in nearly six thousand smaller towns and villages. In 2016 GDP per capita equals EUR 19.266.

The vision of Slovenian transport policy is defined as ensuring the sustainable mobility of the population and supplying the economy with the following objectives: improve mobility and accessibility, improve supply of the economy, improve road safety and security, reduce energy consumption, reduce user and operator costs and reduce environmental burdens.

Quality road and rail infrastructure is one of the basic conditions for a harmonious regional development, creating the best opportunities for an efficient course of economic activity and indirectly for settling in these suitable areas of the country. Therefore, further development of national road network is necessary (building the best possible road network and maintaining and upgrading the already built network at an appropriate level).

Road network:

With 38.779 km of public roads Slovenia has relatively dense road network, both in terms of kilometres per million inhabitants (18.787 km/million) and kilometres per km² of the land area (1,91 km/ km² of the land area).

Slovenian roads include 618 km of motorways and expressways (746 km including motorway junctions). Its motorway density (32.4 kilometres per 1,000 km² and 300 kilometres per 1 million inhabitants) is above the EU average.

Secondary road network equals to 5.919 km, while total lengths of all Slovenian roads is 38.779 kms. State is responsible for 807 km of main or national roads and 5.112 km of regional roads (2014), while 32.242 km of other roads are mainly local municipality roads.

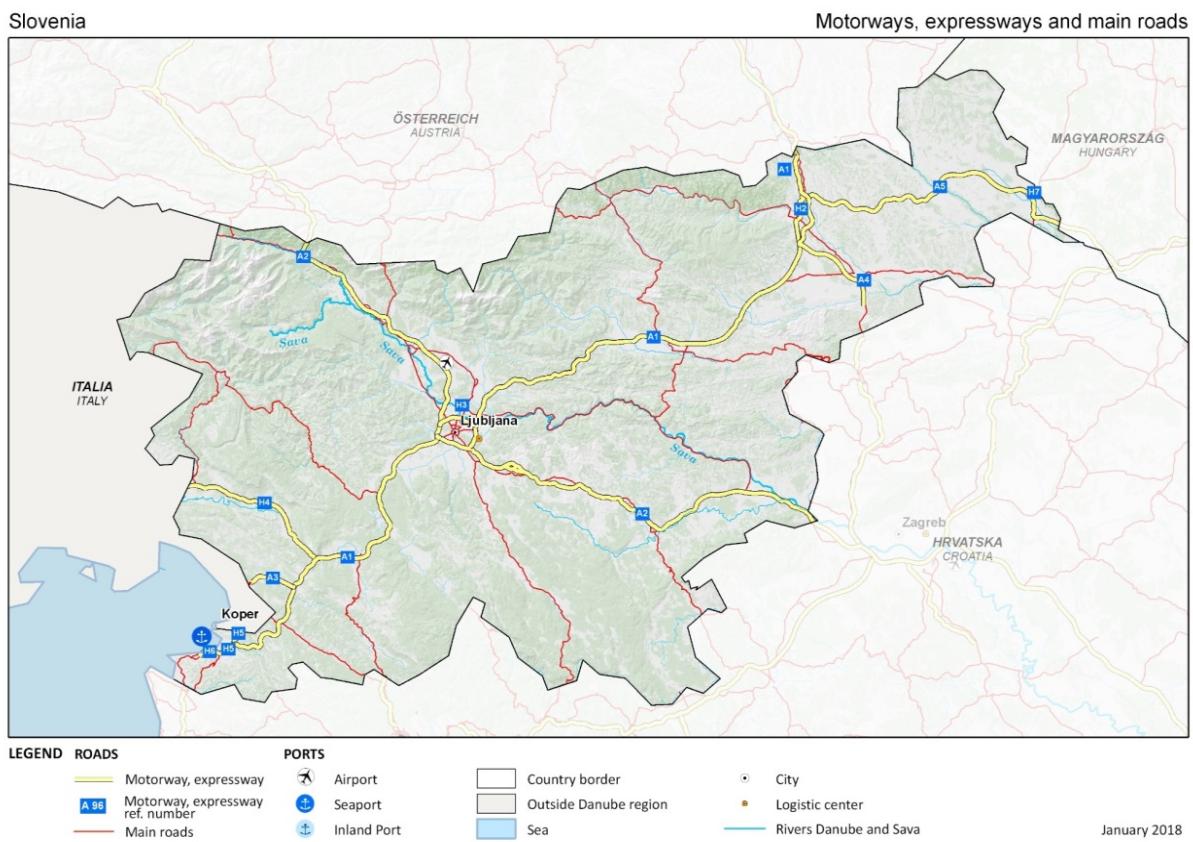


Figure: Motorway and main road map of Slovenia

The main priorities of road development are directed towards ensuring an adequate standard of existing road infrastructure, including road rehabilitation, traffic safety and security, protection of the natural and living environment from the impact of road transport, improving accessibility to regional centres and preparedness for extreme weather events (resilient infrastructure).

The following major projects are planned on the Slovenian road network:

- construction of the “Pyhrn motorway” between Maribor and Gruškovje/ border with Croatia (the last section 7 km in length is to be open for traffic in 2019)
- construction of the second tube of the Karavanke tunnel (under preparation)
- Construction of the 3. development axis border with the Republic of Austria - Dravograd - Velenje - Celje - Novo mesto - Metlika - border with the Republic of Croatia

- Extension of the Ljubljana motorway ring with connecting directions in six-carriageway (under planning)
- Construction motorway between Postojna to border with the Republic of Croatia - direction Rijeka - (under planning).

Main features of the road network:

General traffic estimates: Traffic loads are large and concentrated in the area of the capital city of Ljubljana and in the direction of the transit corridor northeast – southwest (Koper/border with IT – Ljubljana – Maribor – border with AT/border with HU). Traffic is both domestic and transit. Personal transit traffic is greatly increased during the summer tourist season. Transit traffic through Slovenia is greatly increased during the summer tourist season. For Slovenia personal transit traffic represents 7%, while freight transport in transit represents 3%.

Average annual daily traffic (AADT) on all state roads (2015) is 5.574 vehicles. The highest AADT is observed on motorways i.e. 33.834 (in 2017). Average annual daily traffic (AADT) on main or national roads (2015) is 7.532 (in 2015) and AADT on secondary or regional roads 2.375 vehicles.

Bottlenecks: There are quite a few sections of roads or areas where traffic is already close to the limit of traffic capacity. These are in particular:

- Ljubljana motorway ring and main roads entering the city Ljubljana
- the missing section of Pyhrn motorway between Maribor and border with Croatia (section Draženci – Gruškovje)
- western part of Maribor
- tourist road Koper – Dragonja
- an important economic road Velenje - Arja vas
- The area of Kranj
- The area of Novo mesto
- The area of Murska Sobota
- The area Ptuj and
- motorway Postojna - Pivka - Jelšane (border with the Republic of Croatia)

On national roads, these measures are less frequent. Particularly in the course of the settlements, the inhabitants at these roads are not protected against excessive noise.

Municipalities in which overwhelming majority of citizens live along the national roads are cities Maribor (7,697), Ljubljana (6,587), Velenje (4,494), Jesenice (5,858) and

Celje (2,569). The population is the most heavily burdened by noise and emissions from traffic on national roads in the evening between 18 and 22 hours.

Railway network:

Railways represent an important segment of the transport system, both for the transportation of cargo and for providing public passenger transport. The total length of the Railway network equals to 1,209 km. The main lines amount to 575.6 kilometres and regional lines amount to 633.4 kilometres. Out of all railways 330 km represent double track lines, while 330 km of double track and 170 km of single-track lines are electrified.

Two corridors of the core network run through Slovenia: the Baltic-Adriatic Corridor and the Mediterranean Corridor. There are 337 kilometres of main lines on the Baltic-Adriatic Corridor and 462 kilometres on the Mediterranean Corridor. Because the corridors are not covered in whole, the core network in Slovenia includes 496 kilometres of lines. In addition, railway lines of the core network fully comply with the nominal track gauge, they are completely electrified and the ERTMS system was largely implemented. The greatest derogations in meeting the requirements of the TEN-T are related to the standards for speed and axle load. Only 19.3% of the network i.e. 95.7 km of the core network lines have already met the standards required.

In addition, number of projects of upgrading regional railway lines is ongoing or planned in order to reach adequate capacities of individual lines for the public passenger transport and to increase rail freight transport.



Figure: Slovenian rail network – Axle load

Trentino

Road network:

In the autonomous Province of Trento the total extension of the Provincial road network over the Trentino territory amounts to approximately 2439 km. About 1566 km of this is represented by Province-owned roads, while 874 km are made up of roads that are classified as state-owned but are actually managed by the A.P.T. under delegation agreements.

Regarding the type of territory, approximately 2200 km are classified as mountain roads and 239 km as valley-floor roads while mobility can be stratified in the following manner, relatively to its importance:

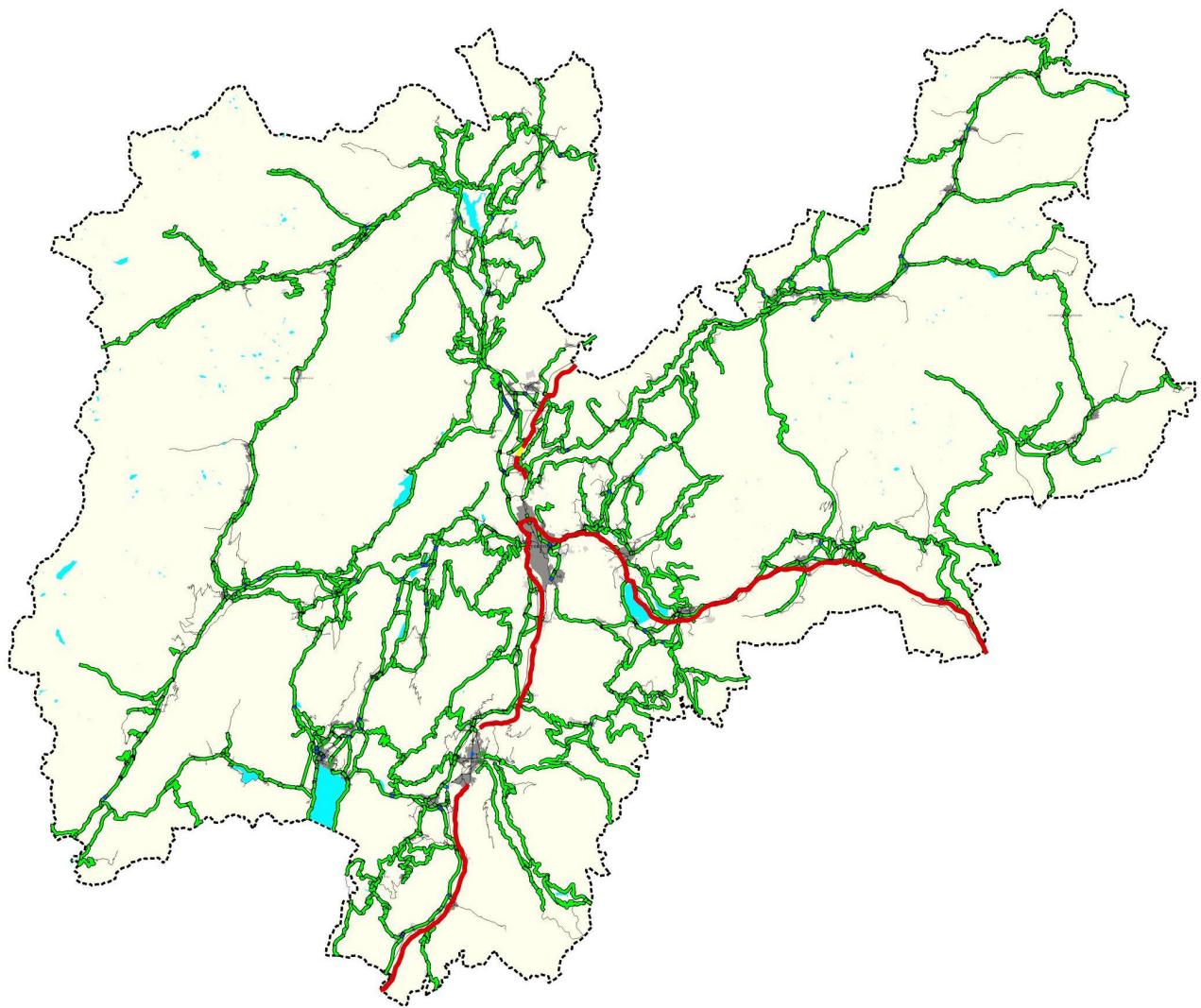
Type of road	km of roads
Primary road - Province-wide mobility	132.884
Secondary road - Province-wide mobility	2306.574

The entire road network described above is managed under the direct administration of the A.P.T. through the deployment of personnel assigned to the Road Maintenance Service as well as through the use of private contractors undertaking special primary road maintenance work.

The network also includes 1115 bridges (over 3 m in length) and 166 tunnels for a total of 71 km.

The Autonomous Province of Trento covers an area of 6,206.88 square kilometres and, on 1 January 2017, had a population of 538,604 residents administered by 176 municipal jurisdictions, five of which with more than 10,000 inhabitants. The implication of these data is that the management cost of almost the entire road network, even if located within inhabited areas, is wholly borne by the provincial government.

The wide and dense spread of residential areas over the Trentino territory and its mountainous relief characterised by numerous valleys allow road penetration between the provincial capital, Trento, and minor towns. There is often a notable floor gradient between the valley mouth and its central area. All this concurs in making the road network of fundamental importance for the movement of freight as well as people.



Territorial map of the Autonomous Province of Trento showing provincial roads considered primary roads (in red) and secondary provincial roads giving access to peripheral districts (in green).

Railway network:

Two rail services of a local character also operate in the Province and reach out to the territories of the Valsugana and the Noce River Valley. The other main valleys (the Cembra, Fiemme, Fassa, Valley, Giudicarie, Vallarsa and Primiero Valleys) and other areas which are major tourism destinations (such as the Garda highlands, the plateau of Folgaria and Lavarone) are exclusively serviced by a secondary-type road network.

Capacity utilisation rates of the primary and secondary road networks under the autonomous Province of Trento:

The capillary road network that supports interconnectivity between various destinations within the A.P.T., including the part of this system that could be classified as a 'secondary network', is of fundamental importance for the road-based movement of persons and freight.

This is shown by the following estimate of traffic per km of network, calculated on the basis of traffic data provided by 100 local monitoring stations from all over the network.

Roads	Total number of vehicles/km (daily)	Light vehicles/km (daily)	Heavy vehicles/km (daily)
Primary network (SS12 + SS47)	2,319,854	2,131,730	188,124
Secondary network	11,418,020	10,860,302	557,719
All provincial roads			
TOTAL	13,737,874	12,992,032	745,843

Considering that the stretch of the Brennero Motorway (A22) that lies within the Trentino Region carries just under 3 million vehicles per kilometre on a daily basis (including just under 800,000 heavy vehicles per kilometre per day), the importance of the so-called 'secondary connections' for the local economy is quite clearly highlighted.

1. THEMATIC AREA

The impacts of the secondary network on accessibility and possible measures to maintain and improve it, with view to economy and society

1.1. General Overview

No contributions received from AG4 Members.

1.2. Sustainable and economically efficient accessibility, in particular in peripheral or weak demand areas; new forms of transport

Aosta Valley

Aosta Valley underlines the lack of funding for services, infrastructure and maintenance, due to a bad balance between costs and benefits, which should be solved with the introduction of different assessment criteria.

In low demand areas, Aosta Valley has introduced a system of on demand services instead of scheduled services.

Bolzano/Bozen

In the autonomous Province of Bolzano the public transport system is based on an integrated service at regular intervals. The primary lines offer connections every 15 or 30 minutes, secondary lines every 60 minutes (especially buses in the valleys). The pillar of the whole system is the railway. Bus lines are connected with the railway and interchange time is about 5-10 minutes. On Sundays and bank holidays the offer is generally halved except for connections with high touristic impact.

Ticket system: public transport can be used with one single ticket (contact less technology) valid for buses, trains and public cable cars. Tickets for students and seniors are season tickets (valid for a certain period), family and commuter tickets are "pay as you go". The fare decreases the more you travel. In case of cross border lines the ticket is also valid partially in the neighbor country (ex. trains until Trento and Innsbruck, Lienz).

Furthermore, interoperability must be improved in the railway connections. The efficiency of the system suffers from non-harmonised technical systems. The autonomous Province of Bolzano has different bus lines crossing regional and national borders. The management (ticketing and billing system, different legal

frameworks) of such lines is quite complicated and requires big efforts from the administration. For each single line a dedicated contract has to be made.

The autonomous Province of Bolzano provides:

1. Subsidy system for purchase of electric cars
2. Improvement and subsidies of infrastructures (loading stations) for electric cars
3. Subsidies for the implementation of projects concerning sustainable transport
4. Subsidies for activities concerning Car-Sharing. All this activities help to avoid pollution and to preserve the environment, not only in South Tyrol but also where the cars travel.

The points 1) and 2) are limited to people or institutions with formal residence in the autonomous Province of Bolzano.

Contributions and subsidies are not accessible to all citizens of the macro regional area.

Liguria

In Liguria, the regional network of local public transport services is composed of regional rail transport network, urban and sub-urban road services network and networks related to other transport modes (maritime transport, funiculars, lifts). It is a conventional structure, based on a linear "comb" organization, It sees regional railway transport as backbone of system and an element of continuity and interconnection between road transport basins.

By current law, are established an Optimal and Homogeneous Territorial Area (ATO) that coincides with entire regional territorial district for operation of railway services, required unitary operation at regional level, whose government is insured by Region and four Optimal and homogeneous Territorial Areas for operation of land and sea transport services, overlapped with Metropolitan City of Genoa's territory and "wide – area" entities of Imperia, La Spezia and Savona, whose government is insured from same organizations.



Liguria Railway Lines

Regional Railway Service:

Railway transport in Liguria has a particular strategic value, as it constitutes element of continuity between road transport basins, covering a supporting function for whole regional mobility; moreover, it represents for long sections a metropolitan connection system, which involves a significant percentage of transfers; such a remarkable transport system, however, develops in a rather problematic infrastructural context due both to morphology of territory and to location of lines, which are particularly winding and characterized by presence of many tunnels.

Servizio Automobilistico Regionale:

Public road transport in Liguria undertake a capillary connection value especially for inland areas that are not served by rail and, therefore, also has an aspect linked to sociality, because a certain level of territorial protection must be maintained and guarantee the mobility needs of all citizens.

Public transport service is currently provided by 5 managers, two on Optimal Territorial Area (ATO) of Genoa and one on each of other Areas.

ATO	GESTORE ATTUALE
Città Metropolitana di Genova:	
(servizio urbano)	AMT (Azienda Mobilità e Trasporti s.p.a.)
(servizio extraurbano)	ATP (ATP Esercizio s.r.l.)
Imperia	RT (Riviera Trasporti s.p.a.)
Savona	TPL (TPL Linea s.r.l.)
La Spezia	ATC (ATC Esercizio s.p.a.)

Optimal Territorial Areas (ATO):

Liguria Region has identified an Optimal Territorial Area (ATO) related to regional rail services, and four ATOs organizing inside local public transport services different from railway, in order to encourage improvement of service, rationalization and effectiveness of spending.

5 Regional Areas are:

- ATO rail, coinciding with entire regional territory including Genoa-Casella railway;
- ATO of Genoa, coinciding with Metropolitan City of Genoa Territory;
- ATO of Imperia, coinciding with wide area territory of Imperia;
- ATO of La Spezia, coinciding with wide area territory of La Spezia;
- ATO of Savona, coinciding with wide area territory of Savona.

Services are distributed throughout regional territory, satisfying demand and guaranteeing citizens right to mobility. Ligurian territory has small urban centers, rural areas, mountain communities and peripheral areas of cities that must be particularly taken into account in planning of services.

Referring to local public transport, annual mileage production planned in 2016 in Liguria is about 55 million km * total cars / year (minimum services financed by Region and additional services financed by local authorities of territory).

1. ATO railway:

The mileage production for the year 2016 amounts to 6.7 million trains * km. The following is an extrapolation of 2016 data provided by Trenitalia.

Treni km (mln)	6,7
Velocità commerciale	42,31
Ore treno (000.0)	160
Capacità offerta (posti.km) (mln)	3.542

2. ATO of Genoa:

Public transport service is ensured by "AMT" in urban areas and by "ATP" in extra-urban areas of Metropolitan City. Data of service scheduled in 2016 are described in the following table:

	Servizio Urbano	Servizio Extraurbano	TOTALE ATO
Gestore	AMT	ATP	
Num. Linee	127	154	281
Num. Percorsi	637	1.781	2.418
Num. Corse/anno	3.956.184	750.840	4.707.024
Percorrenze/anno (vett*km)	23.334.835	8.909.643	32.244.478

Fonte: Osservatorio Regionale Trasporti

3. ATO of Imperia

Public transportation service in Imperia area is entirely carried out by "RT". Data summarizing service scheduled in 2016 are described in following table:

	Servizio Urbano	Servizio Extraurbano	TOTALE ATO
Gestore	RT		
Num. Linee	36	38	74
Num. Percorsi	143	274	417
Num. Corse/anno	188.524	257.534	446.058
Percorrenze/anno (vett*km)	1.338.984	4.270.585	5.609.569

Fonte: Osservatorio Regionale Trasporti

4. ATO of La Spezia

Public transport service in La Spezia area is entirely is ensured by "ATC". Data summarizing service scheduled in 2016 are described in following table:

	Servizio Urbano	Servizio Extraurbano	TOTALE ATO
Gestore	ATC ESERCIZIO		
Num. Linee	37	79	116

Num. Percorsi	383	1.006	1.389
Num. Corse/anno	401.009	483.249	884.258
Percorrenze/anno (vett*km)	2.844.008	6.289.300	9.133.308

Fonte: Osservatorio Regionale Trasporti

5. ATO of Savona

Public transport service in Savona area is entirely ensured by "TPL Linea". Data summarizing service scheduled in 2016 are described in following table:

	Servizio Urbano	Servizio Extraurbano	TOTALE ATO
Gestore	TPL LINEA		
Num. Linee	15	68	83
Num. Percorsi	114	629	743
Num. Corse/anno	152.347	472.845	625.192
Percorrenze/anno (vett*km)	1.466.871	6.864.647	8.331.518

Fonte: Osservatorio Regionale Trasporti

Programming of services in areas with weak demand:

Each Area is assigned task of developing, or developing, during tender stages, flexible transport systems to meet demand of areas with a low demographic index.

Flexible services have as their main objective improvement of quality of public transport service, combining specific needs of users' mobility with containment of costs by the manager. Each type of service has specific characteristics to availability, flexibility and of course costs. Among main types of flexible services, they can be evaluated:

- service with fixed route: these are type of flexible service that most closely approximates line TPL service, with main difference given by the fact that, in the case of flexible services, trips are only carried out with reservations; lines and times are therefore pre-established according to an initial exercise program in which the race is carried out only in case of reservation, even if only for the required travel section.
- service with fixed route and with possible variations: in this case service provides a route and a base timetable that may undergo some variations contained depending on bookings made; secondary stops, freed from fixed line, are only served in case of reservation (in this case it is possible to limit length of line and

tortuosity of routes to serve settlements dispersed throughout territory). baselines are defined in terms of route, while with regard to timetable, set departure time, arrival time has a certain degree of flexibility due to possible execution of deviations at request of user;

- service with partially free route: this is a type of service without fixed routes and times, but with a freedom of choice of route that, however, must be included between certain points in territory (TPL stops, attraction / generation poles mobility such as railway stations, shopping centers, schools, hospitals, etc.);
- free service: it is a totally flexible service, which does not provide fixed ascent / descent points. It is however included within the reference territory and / or an established time slot. This type of service usually also concerns transport of disabled users.

Fixed route services are quantified through their "mileage production" in place of Public transport service line. Regarding free or partially free path types, this is preferably a service that complements public transport offer with a production quantified in "service hours". In latter case, to calculate the consideration, service hours must be converted into "km-equivalents" by means of a first estimate of maximum commercial speed, which will then be established more precisely during analysis of service performed.

Currently Liguria Region has identified two pilot projects on call services, one in strategic "Internal Areas" and one in Italy / France cross-border program PITEM CLIP Alcotra.

Alcotra PITEM CLIP, realization of a bus-on-demand platform for areas with weak demand: A complete open-source software platform for management of call services in areas with weak demand in cross-border pilot area is implemented and tested 'area of cooperation, in order to promote flexibility of transport services and reduce costs for local administrations wishing to establish such services on their territory.

Software platform, together with other complementary tools within project (see project activities), will be freely distributed to public bodies and / or transport companies that decide to operate this type of service.

Development of a common platform made available to programmers / managers of services in areas with weak demand, will allow economies of scale, (for example, at level of operations center for booking and call centers)

Availability of data produced by service management (OD and travel times) will allow planners and programmers to deepen level and spatial distribution of transport demand in their territory, in order to improve the efficiency of this type of services .

Internal areas "pilot project Mobility for valleys of Antola and Tigullio"

Operating methods of "Reservation service" managed by ATP: The "on demand" service is a local public transport service. It is usually implemented by time slots, on a predefined territory. In "on demand" reservation service, service is scheduled daily based on needs of users. Scheduled trips are carried out only if there is at least one reservation.

- Service is clearly identifiable user through a special logo on vehicles, stops and any document concerning service itself.
- Reservation service is at undifferentiated access. User who uses reservation service is entered in a list of users of service.
- Registration form is published on ATP internet site, available on paper on vehicles that make service and at ATP information points in area.
- Registration is assigned to customer an identification code that allows booking of service.
- Reservations are made by phone or through other communication channels activated by ATP and communicated to users by same. Reservation is registered by ATP operations center.

Operations center provides for formation of service upon receipt of user's reservation. Bookings are satisfied in chronological order and until available resources are exhausted. User may consider his / her reservation accepted by ATP (and service consequently provided in agreed terms) only in case of explicit confirmation of same service by operator of ATP operations center.

- Reservation is valid if customer code is indicated, date and time slot of service (time from departure stop is requested), departure stop, arrival stop, possible analogous indications for return journey.
- Reservation can cover several users at the same time.
- Reservation must take place with at least one working day (advance) on service. On Friday, reservations for following weekend are collected.
- Plant will accept bookings up to one hour before service is provided, provided they do not involve significant changes in defined route.
- A non-booked user will still be able to access service - even with simple request at bus stop - as long as there is space on board vehicle.
- Access to service is subject to possession of a valid ATP travel document validated and appropriately validated.

On ATP website service is ensured areas where service operates are published, periods and times of activity, map of territory served with stops and routes that can be made, list of ATP stops in territory.

Piedmont

In weak demand areas, the "traditional" Local Public Transport system is not, by definition, economically sustainable based solely on demand. The lack of services in those areas makes them less attractive and, as a result, makes demand even weaker, feeding a dangerous spiral. Depopulation makes ordinary maintenance less justifiable, bringing with it the higher costs of extraordinary maintenance.

The solutions currently hypothesized foresee the association of weak demand area with more profitable areas in public tenders for the provision of the service or on-demand services. However, the on-demand service with driver does not significantly reduce the costs of exercise.

Further solutions to be tested in the short term in weak demand areas, to be tested in pilot areas of the National Strategy of Internal Areas, could be to support the traditional LPT services that are strictly necessary and re-settled as far as possible according to the real needs of the local community, coupled with adduction services managed directly by the local community, through mixed car-sharing / car-pooling, micro transit, economically self-sustainable.

The development of self-driving vehicles also opens up to interesting long-term perspectives, as it would offer services comparable to traditional LPT, but with lower operating costs.

Slovenia

Transport flows in Slovenia:

The current situation (data available for 2011) of goods flows in Slovenia and its vicinity shows that goods flows are relatively strong on the following routes: SE-NW direction (Divača–Ljubljana, Ljubljana–Zidani Most and Zidani Most–Pragersko) and do not lag behind volumes in neighbouring corridors.

A total of 40 million net tonnes per year were transported in 2011 by rail and road on the Brenner Pass, which is one of the most important European corridors and connects the economies of Germany and Italy through Austria. According to estimates¹, some 50 million net tonnes/year were transported by road and rail on the most burdened Austrian corridor Vienna–Linz. In the area of Koralm, some 22 million net tonnes/year were transported.

A total of 34 million net tonnes/years were transported by rail and road on the Slovenian Divača–Ljubljana corridor, and 37 million net tonnes/year on the Baltic–Adriatic Corridor section Ljubljana–Zidani Most (including the railway line and the AC1 and AC2 motorways), which is almost as much as over the Brenner Pass.

¹ Precise information is not available to the public, but values are estimated based on the known number of goods trains and road haulage vehicles.

Some 21 million net tonnes/year were transported on the Zidani Most–Pragersko section, which is almost as much as through the Koralm Tunnel.

Notification by category of roads:

Based on the public authorization, traffic information on the state roads is entrusted to:

- DRSI (Slovenian Infrastructure agency) for certain parts of motorways and main and regional roads
- DARS (Motorway Company in the Republic of Slovenia) for motorways.

Municipalities are responsible for information related to the situation on local/municipality roads.

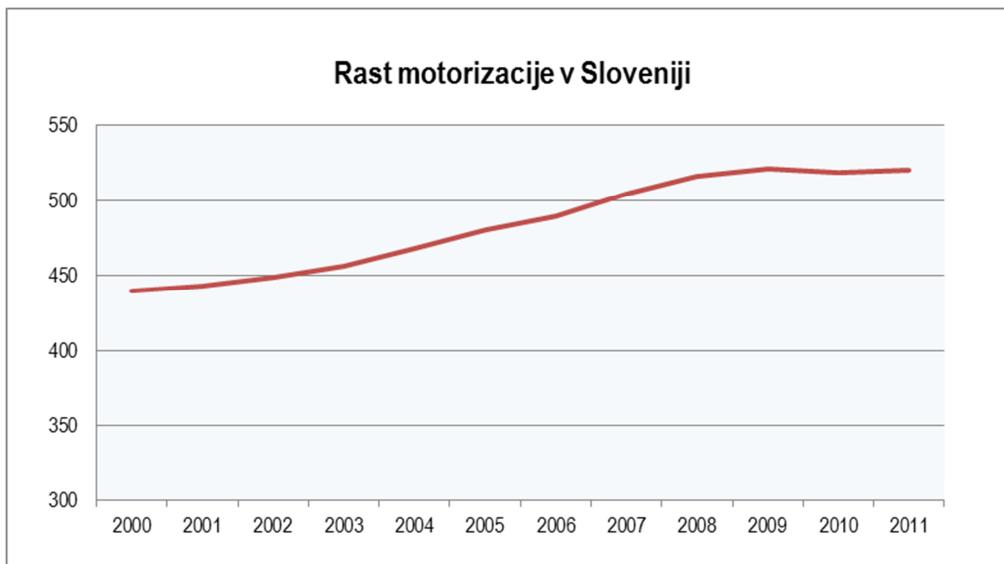
The traffic information center for state roads, on behalf of the two state road operators in the Republic of Slovenia (DRSI, which manages some expressways, main and regional roads, and DARS d.d., which operates motorways and four-lane expressways) collects information of conditions on the state roads (such as accidents or winter conditions) and daily traffic (such as road work sites or congestions). This information is transmitted to the public media and users of the national road network.

Responsibility for information on traffic on motorways lies with the Motorway Company in the Republic of Slovenia d.d. (DARS d.d.), while responsibility for information on traffic on state roads is of the Slovenian Infrastructure Agency (DRSI). Municipalities are responsible for information on traffic on other roads.

Motorisation:

In the past twenty years, motorisation in Slovenia increased by 23%, and amounted to 523 private vehicles/1,000 inhabitants in 2011. Slovenia has thus almost caught up with European countries with the highest motorisation rate and it ranks among the most developed European countries in this respect.

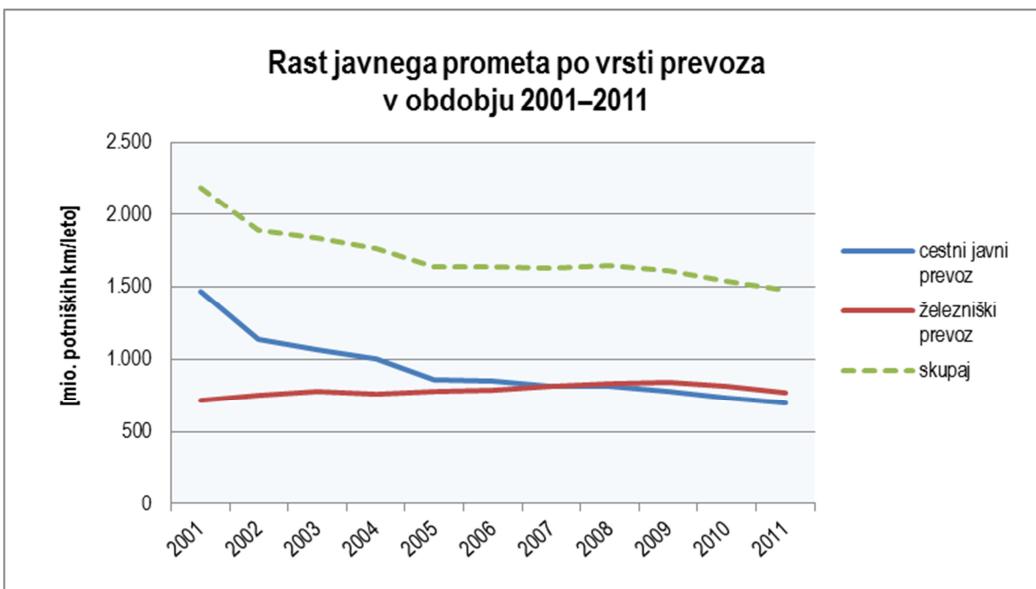
High motorisation also leads to more use of private vehicles. Motorisation in Slovenia is quite high with regard to GDP and personal income. This is also affected by the dispersed settlements typical of Slovenia, which demand greater use of private vehicles; at the same time, the use of private vehicles also accelerates the construction of such settlements.



Motorisation growth in Slovenia between 1999 and 2011

Source: SURS (Statistical Office of the Republic of Slovenia).

Passengers travelling by public transport in Slovenia: While in the past, automobile transport constantly increased, the number of passengers that travelled by public passenger transport has decreased. Road, i.e. public bus passenger transport (which does not include urban public passenger transport) decreased by 38% from 2002 to 2011, or 3.7% per year. The number of passengers travelling by urban public passenger transport decreased by 13.4% in the same period. Rail passenger transport slowly increased, but only until 2009, whereupon it began to decrease.



Increase in passenger kilometres by types of road in the period from 2001 to 2011,
Vir: SURS.

From 2001 to 2008 public passenger transport increased by 16.6%, and then decreased by 13.8%. In total, public bus and rail passenger transport decreased by 32% or by 2.8% per year from 2001 to 2011.

The current developmental direction regarding the selection of public transport means is such that the use of private vehicles is constantly increasing, and the use of public transport is decreasing.

Infrastructure for the use of alternative fuels in transport:

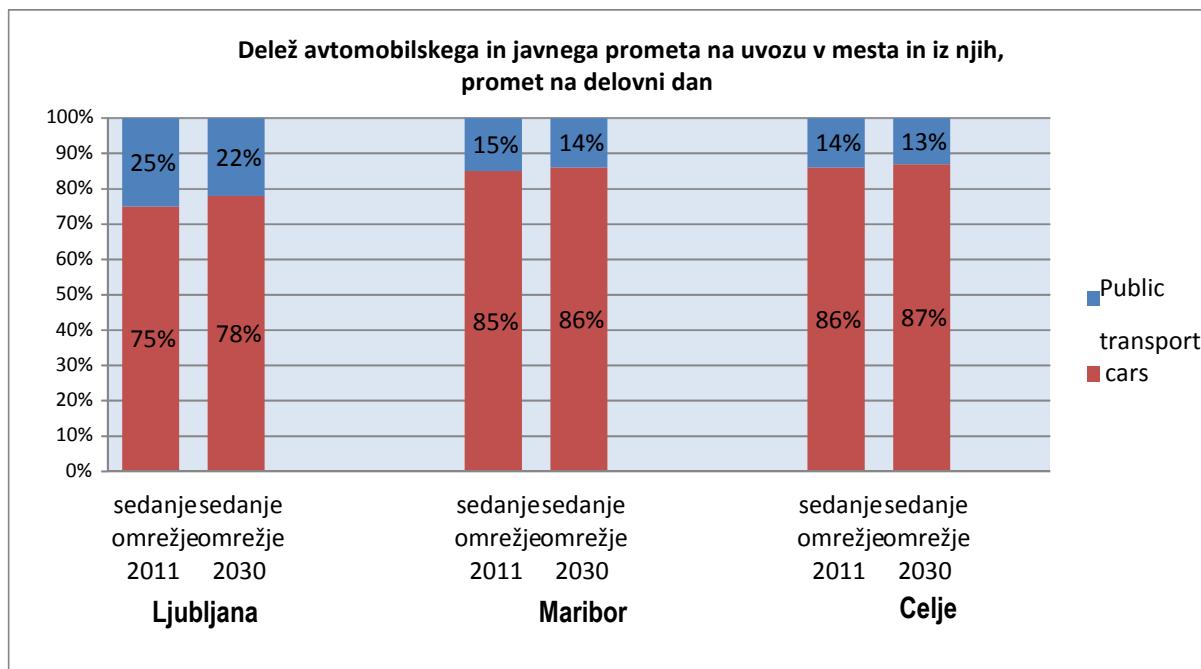
With the Directive 2014/94/EU on the deployment of alternative fuels infrastructure, the Commission plans to ensure the construction of alternative fuels infrastructure and the introduction of common technical specifications for adequate infrastructure in the EU. For this purpose an obligatory coverage with minimum infrastructure for electrical energy, hydrogen and natural gas (compressed natural gas – CNG and liquefied natural gas – LNG) is envisaged. Alternative fuels also include bio-fuels, synthetic fuels and liquefied petroleum gas (LPG).

Slovenia has already adopted a national programme in this field, thus determining the coverage of alternative fuel infrastructure on its territory for: a) electric vehicles by 2020, b) compressed natural gas for private vehicles by 2020, c) liquefied natural gas for lorries and ships by 2025, d) hydrogen for motor vehicles by 2025, e) supplying electric energy to ships from land by 2025, and f) supplying electric energy to aircraft at airports by 2025.

It is believed that by using alternative fuels, Europe would reduce its dependence on the import of fossil fuels and negative impacts on the environment.

Modal split:

Passenger transport: Currently, 69% of trips in Slovenia are carried out by private vehicle, 8% by public passenger transport, 5% by bicycle and 18% walking. If the transport arrangement remains unchanged, 68% of trips in 2030 will be carried out by private vehicle, 7% by public passenger transport, 5% by bicycle and 20% on foot. Thus, mode choice would not significantly change; the increase in the number of trips would be approximately the same for all means of transport.



Modal split at entry points to towns

An analysis of entries to, and exits from, larger towns shows that the share of journeys by private vehicle would slightly increase by 2030, while trips by public transport would decline if transport options remain unchanged.

The Slovenian Transport Development Strategy (2017) and consequently the National Programme also define a set of measures and activities in the field of sustainable mobility, such as "park and ride", single ticket, harmonised timetable, quality of services and so on.

Styria

Beside the TEN-T core and comprehensive network of railway lines in Styria, there are railway lines in peripheral areas, namely in the Thermal Region (eastern part of Styria) and in Salzkammergut (northwestern part of Styria). Although due to a very low settlement density and disperse spatial structure, the potential of inhabitants for using the public transport is very low, these railway lines have a high touristic potential, as they are located in catchment areas of touristic hotspots. Attractive railway connections and special offers for tourists to and within these sub-regions should lead to more passengers on the railway lines and protect them from closing.

Switzerland

In Switzerland, several trials are tested to improve the accessibility of non-well served areas using shared mobility:

Autonomous shuttle-bus (Sion, Cossonay, Genève, Fribourg, Schaffhausen, Zug): Currently, 6 automatic shuttle buses are tested in different urban and traffic conditions. Some of them are integrated in the timetable while others are operated in a demand service. In Sion the shuttle circulates freely in the pedestrian zone within the city center. In Cossonay the shuttle provides connections between the funicular station (which connects the municipality to the suburban railway line of Lausanne) and the village center. In Geneva some shuttles will circulate in the near future in areas badly served by urban public transport (trams and buses). At Schaffhausen the shuttle is integrated into the public transport timetable and brings people to the Rhine Falls. In Fribourg, the shuttle connects a large industry complex to an existing trolleybus stop. In Zug the service has now started as an automatic transport link to one small district with fixed stops, but will switch to a personal service.



Taxito (system for assisted hitchhiking). At special TaxitoPoint stops, the passenger sends an SMS with the desired destination to the number 8294 or dials it via the Taxito Mobile app. At the TaxitoPoint board, the destination is then indicated on a panel. A driver passing the TaxitoPoint is able to see the desired destination as well as the passenger and can pick him up. The passenger sends the car license plate number by SMS to the number 8294 or enters via the app before boarding. Both parties are now recorded and the safe trip together can begin.

Other common systems of shared mobility (mobility car sharing, PubliBike, Carvelo, etc.): These are various systems also known abroad for the sharing of means of transport (cars, bicycles, e-bikes and electric-cargo bikes).

Trentino

The Autonomous Province of Trento informs that recent transportation studies have demonstrated that anticipating a 50 per cent expansion of the offer of road-based extra-urban public transport services in the A.P.T. would translate into a matching increase in passengers per day (from 35,000 to 55,000). On the other hand, local public transport (whether rail- or road-based) presents a cost-benefit balance that would show it as fighting a 'losing battle', if compared with 'lighter' forms of sustainable mobility. Merely as an example, the workforce of firms with more than 10 employees amounts to approximately 80,000 people in the A.P.T. and generates 150,000 trips/day using private vehicles. If the numbers of these journeys were curtailed by 20 per cent and commuters availed of other forms of light mobility resources (such as cycling), this would account for 30,000 trips at an extremely reduced cost to the public, whereas funding 30,000 trips on local public transport would incur costs of at least Euro 20 to 30 million.

Summarising, in territories with a challenging mountain geography (such as the A.P.T.) where the population is distributed among small-size residential areas, the mobility solutions for connections can be:

1. Public road transport for relatively less urbanised areas with low population density in substitution of a local railway;
2. Forms of 'light' transportation, encompassing both urban and extra-urban environments, for home-to-work commuting (prioritising cycle paths, electricity-powered transport, car-pooling, car-sharing and, more generally, shared modes of transportation).

In the Autonomous Province of Trento, the number of annual bus passengers reaches 47 million (meaning passengers transported on urban and extra-urban bus services, the latter carrying 27 million of these 47 million). Railway passengers number 7.5 million yearly. In practice, this means that passengers of the extra-urban sector (or ca. 15 million if the number of actual passengers transported is reckoned, after deduction of a physiological sample of potential trips made by commuter-pass holders) are twice as many in number as railway passengers. The expense, however, is far less than double the cost of running bus services in a traffic environment which, excluding the Adige River area, covers a territory with a very "fragmented" population.

Similarly, the daily figure for the number of railway passengers (as opposed to the 7.5 million transported on an annual basis by rail) is 22,000, or approximately half the 45,000 passengers daily transported on extra-urban bus services.

The topic of “sustainability”, therefore, cannot refer exclusively to environmental sustainability but also to economic sustainability (and not only of investments, but also of management) and consider the risks that large infrastructural projects drain many resources, later proving to be insufficient to meet the requirements of widespread mobility services which for peripheral districts that are extremely fragmented in terms of residential built-up areas, see greater efficiency and efficacy in a road-based extra-urban service. Thus, road-bound services should not be demonised to promote railway services. Road services should be carefully evaluated instead by weighing their positive vs negative economic externalities.

In the final analysis, “Which modal choice?” is a delicate decision which will have to be made on whether public road-based, railway, etc. should be preferred from within the bracket of the sustainable modalities of public transportation once the trans-national process of building the Brenner Base Tunnel and its access routes have been completed.

For instance the Avisio River Valleys, in the heart of the Dolomites, on the left side of the mountain range as the Adige River Valley sweeps down across the whole Trentino, are one of the main tourist districts of the Autonomous Province of Trento. This territory, which is characterised by the outstanding quality of its environment, is home to about 35,000 people and is annually visited by more than six million tourists. Up to the early 1960s, the central part of the Avisio Valley (the Fiemme Valley) was connected to the Verona-Munich international trunk line via a railway that was later shut down and totally dismantled. The development of individual motorised transportation in the last 20 years has given rise to growing traffic issues which the Province of Trento no longer wishes to address through the use of private cars and new road construction. In the last two years, a bus service every 30 minutes has been put in place on the main bus route which serves the whole length of the valley. This new service has seen the doubling of the number of its passengers who appear to enjoy the possibility to get about without needing their cars.

It has been initiatives such as this that have led the provincial administration to study the possibility of setting up a rapid bus transit (RBT) system partly running within bus lanes to make public transport competitive against private car use. This RBT line will run between the towns of Cavalese and Canazei over a distance of about 60 kilometres and will provide a link between tourist facilities such as cable-ways and the chief localities of the Avisio valleys at a frequency of four journeys per hour in each direction (increased to 8 per hour in the busiest hours and sections of the line). Seventy per cent of the population and 50 per cent of tourist accommodation will be within 300 metres in a straight line from any RBT stop, with a view to creating the preconditions for car-less valley-wide mobility.

Under the provisions of the project, a fleet-monitoring system, a centralised management system to coordinate the right of way at traffic lights and gathering real-time mobility data along the entire route will be put in place, along with low-emission vehicles (either electricity-powered or hydrogen-fuelled) integrated with an e-bike Sharing service at main stops to connect to the cycle path network extending along the valley floor.

This infrastructure project has been designed to ensure the compatibility of sections segregated from road traffic with the future possibility of an upgrade of the bus route into a light rail transit system.

Also noteworthy is the legislative action of the Provincial Executive during the second half of 2017. A specific project has been adopted to support electricity-powered mobility. The guidance for action is partly derived from policies defined in a provincial law of 2017 and are essentially the following:

- Facilitate the economic and functional realization of an electric car charging point infrastructure which, in consideration of the limited autonomy of electricity-powered vehicles, currently represents the main obstacle to the widespread development of electricity-powered transport;
- Provide economic incentives for the acquisition of electricity-powered vehicles and, possibly also for the electricity costs needed for this type of transport;
- Establish regulatory instruments as well as specific technical prescriptive standards;
- Incentivise a 'roaming' recharge scheme promoting a 'virtual meter' software to enable individual users to recharge vehicles from different charge point systems across the provincial territory. The user's personal or corporate account would then be debited with the relative costs of recharging;
- Develop the public bicycle sharing service with bicycles featuring e-motor-assisted pedalling as an extension of, and integration into, the local public transport (LPT) system in the more densely populated areas or main tourist destinations;
- Incentivise the acquisition of cargo bikes with assisted pedalling for delivery of goods in towns.

Tyrol

Tyrol underlines some of the challenges and needs for growth to better include some of its areas which suffer of some weaknesses. In particular it presents an ongoing study by Land Tirol and national railway operator ÖBB, which is investigating possible corridors for a direct railway connection into Ausserfern province, closing a

gap between the Inn valley across the Fernpass to the remote area. The objective is to provide better accessibility to the remote Tyrolean province of Ausserfern by reducing travel time by rail. Currently there is no direct train service and passengers from the provincial capital Reutte are required to change in Garmisch to arrive in Innsbruck by train, taking the overall journey to 2:22 hours. A new railway infrastructure could cut travel time between Reutte and Innsbruck down to 1:30 hours to match driving time by car or long-distance bus services. This new connection would not only improve the link within Tyrol, but also allow for faster services from the upper Inn valley across the border to Bavaria and Munich.

In an Eusalp perspective it is necessary to better connect remote regions to the core network by improving sustainable transport modes, also across national borders in EUSALP.

1.3. Management capacity and maintenance of the network

Bolzano/Bozen

In the Alto Adige-South Tyrol territory, speaking of Ordinary and extraordinary maintenance activities of secondary networks, in order to ensure road user movement in conditions of the utmost safety, the main activities are focused on the maintenance of the possible higher level of safety. These activities are displayed in:

1. Functional and geometrical norms for projection and building of E14 (norms which adapt to the alpine context of the territory to optimize security and sustainability).
2. Elaboration of a priority list for planning construction projects: falling rocks list, pavement replacement, replacement and adaptation of guardrails (including guardrails for motorcyclists), interventions on bridges. Intervening with priority lists signifies avoiding dangerous situations becoming emergencies, putting public safety at risk, besides investing at best resources for the maintenance getting the best cost-effectiveness ratio: it allows to optimize costs to avoid situations of urgency.
3. Constant study with a working group for the improvement of the persistence of the road pavement (and thus of security for the citizen). The study of materials and blends allows to identify solutions with better cost-benefit ratio, that is, better technological choices with initially slightly higher costs and often also equal to usual solutions, with an increase of the useful life of the road pavement, with reduction of maintenance costs and better guarantee of pavement security in time.
4. Development of norms to monitor bridges and to check their transitivity. The national legislation is lacking therein, disposing clearly of a mere responsibility

of the public administration and a generic burden for supervision. A regulation would permit to work uniformly and efficiently, allowing the organization of any aspect of monitoring activity (the monitoring will be applied on several levels of analysis and temporal frequency, trying to optimize administration costs within sustainability).

5. Awareness campaigns about behavior by citizens: SOS Zebra, No-Credit, No-Alcohol and others.
6. An input would be to develop a monitoring of real-time data, like google maps, adding the presence of road-yards of administrations, possible on-line alarms. The whole should form a modern traffic report headquarter with real-time data. Such a system might give better indications and give more security to road-users, being whole the time informed.

Weaknesses inside this management system are in general those things which can be improved and therefore the analyzed points are exactly those arisen from weaknesses with the necessity to intervene. In a more practical way, we can say that the weakness is represented by normative aspects, sometimes confusing, which paralyses with reference to responsibility the attempts to improve (getting stuck in aspects required by law): only think about the normative aspects regarding guard-rails (in which the approval of equipment is required) which stop the improving initiatives like in the case for motorcyclists guard-rails, the technical responsibility of norms which are thought for planning, yet are not in line with the requirements to verify existing structures, which often lack a legal framework (it is the case of existing bridges and in general of existing structures: we have to consider that there are bridges and structures of the beginning of the early twentieth century which are still in use).

Such aspects are in general efforts to optimize and make more efficient the road network management and have been developed on a network in an alpine area, with climate and morphological characteristics typical for an alpine environment. The several interventions could surely be extended, because of morphological analogies, to the road-system of the whole alpine macro-region.

Slovenia

Road Management:

In Slovenia, the basis for optimal road management are various measurements that enable the assessment of the actual quality of the infrastructure. In Slovenia, a computer-aided system (e.g. DTIMS_CT or PMS (Pavement Management System) was introduced on the motorways and also on other state roads. It enables continuous monitoring of the conditions of the carriageways and the preparation of reconstruction plans. Plans are made on the basis of mathematical models which are

based on collapse curves of the carriageway. Such systems provide efficient infrastructure management and long-term financial sustainability.

Condition of road surfaces and structures on the Slovenian roads are following:

- Condition of pavement structures on motorways and express roads in 2016: a) good 44 % b) marginal 24 % and c) poor 32 %;
- Condition of pavement structures on national roads in 2016: a) good 30 %, b) marginal 10%, c) poor 60%;
- Condition of road structures on national roads in 2016: a) good 21%, b) marginal 36% and c) poor 43%.

Traffic safety:

Number of killed persons in road accidents in year 2014 was 108 i.e. 52 persons per million inhabitants died in road accidents. There were 58,14 % less fatal accidents (deaths) on the roads-between 2005 and 2014. The motorway death and serious injury rate on the 770km of Slovenian motorways is about 7 times lower than on other main and regional roads.

Traffic safety is gradually improving. In the last ten years, the number of road fatalities has almost halved. Significant improvements occurred through the introduction of related measures in various areas, from the construction of the motorway network and the introduction of vignette tolls, to changes in legislation on rules that considerably more rigorously deal with infringements due to non-compliance with speed limits, driving under the influence of alcohol, illicit drugs or psychoactive substances. Important are also road safety measures introduced at the level of municipalities and the influence of the media and non-governmental organizations.

Speed Limits are imposed on all Slovenian national roads. On motorways speed limit is 130 km/h and on expressways 110km/h. Speed limits on other national/regional roads is 50 km/h within urban areas and 90 km/h on open roads.

Hazardous road sections:

While well designed motorway network is one of the main reasons for increased road safety, there are still too many dangerous sections on Slovenian road network. For example more than 100 road crossings are inappropriate from the point of road safety, 490 level crossings of roads and railways are marked only with traffic sign (passively protected) and 655 km (15 %) of state roads are rated at a high level of risk.

Dangerous places are primarily on the roads secondary state roads e.g. Postojna – Jelšane/border with CRO (direction towards Rijeka; Adriatic Sea), Celje – Velenje

(northern part of 3rd Development Axis), Novo mesto – Metlika (southern part of 3rd development axis) and Ljubljana – Kočevje (part of 3.a development axis).

Investing spending and maintenance expenditures:

In 2013, 104 mio EUR were invested in national roads and 123 mio EUR were used for the maintenance of state roads. Estimation show that Slovenia would need between 200 – 250 mio EUR in order to be able to properly maintain its road infrastructure assets.

Railway management:

Railway infrastructure:

Stimulating environmentally friendly modes of transport and enforcing the principles of multi-modality must take the priority in eliminating the accumulated structural weaknesses in the infrastructure development, primarily in the field of railway infrastructure. Slovenia follows the requirements of European transport policy for establishing a trans-European network. In the past, development focused mainly on improving the motorway traffic network, while other areas lagged behind in development. This led to a standstill, especially in the field of railway infrastructure, due to the lack of funds for investment in the national budget and the lack of other necessary sources of investment financing. The standstill occurred in spite of the investment of significant funds in the modernisation of railways in recent years (projects: modernisation of the existing Divača–Koper line, modernisation and electrification of the Pragersko–Hodoš line, arrangement of level crossings, GSM-R and ERTMS project).

Since its independence in 1991 and until 2014, public railway infrastructure in the Republic of Slovenia has not changed significantly, since its key technical characteristics have not changed very much. A new Puconci–Hodoš (state border with Hungary) was constructed, which enables a direct connection to the Hungarian railway network. Furthermore, regular and investment maintenance works were being implemented, including minor investments. Major upgrading is currently underway on the Pragersko–Hodoš and Divača–Koper lines, and on several sections of the Celje–Maribor line.

Public railway infrastructure management:

The organisation of management, maintenance and investment in public railway infrastructure (hereinafter: PRI) is laid down in Slovenian legislation and that of the EU. The public railway infrastructure consists of structures and devices necessary for smooth public rail transport, and appertaining land which functionally serves its

dedicated use. Investing in PRI denotes the construction of new PRI and upgrading of the existing infrastructure in order to improve its transport, technical and safety characteristics. PRI is a constructed national asset owned by the Republic of Slovenia. The tasks of managing public railway infrastructure are implemented by the PRI manager based on the contract concluded with the Government of the Republic of Slovenia. The manager's tasks are implemented by the company, SŽ – Infrastruktura, d.o.o. (hereinafter: SŽ Infrastruktura).

The powers are divided between several entities: the ministry responsible for infrastructure, the Slovenian Infrastructure Agency, DRI upravljanje investicij, Družba za razvoj infrastrukture, d.o.o., AŽP and SŽ Infrastruktura.

Trentino

In the Trentino territory, speaking of Ordinary and extraordinary maintenance activities of secondary networks, in order to ensure road user movement in conditions of the utmost safety, the A.P.T. thereby promotes

- the execution of interventions and *operational activities*, mainly targeted at road maintenance;
- the execution of *indirect activities* for the purpose of road network management as a whole;
- the execution of road *usership-centred administrative activities*;
- the execution of *administrative activities for internal management purposes*.

Operational activities:

These operational activities are aimed at improving the safety of traffic on roads and the overall comfort of travellers. To achieve these aims, direct interventions are carried out that are designed for road network maintenance and primarily concern road surfacing: periodical re-laying of the bitumen seal, high-performance asphalts to create special road surfaces, use of products that minimize deformation and minor discontinuities between road surfaces, timely interventions on cracks and potholes, adequate and timely winter road treatments. Particular attention has been directed to the maintenance of all items of roadside furniture capable of keeping road works in efficient order while promoting the environmental protection and landscape improvement of the area, also carrying out ad-hoc cleaning interventions on roads, tunnels, and their specific fixtures, as well as green area management activities.

These activities are carried out both in terms of prevention and renovation. In the former instance, the Service diligently programmes the activities that are to be carried out on the basis of assessments and considerations predicated on the monitoring of the road network, the importance of the road concerned, expenditure and available financing. By contrast, renovation interventions cannot be planned

ahead because they are consequential to exceptional and unforeseeable circumstances.

Indirect activities:

Indirect activities are aimed at ensuring the safety of overall traffic movement. They include the management activities required by road network and the delivery of usership-centred services. Among the former activities, providing data about road network conditions and associated inputs (such as the state of the asphalt seal, of engineering, of tunnel and bridge works, road traffic accident rates, etc.) becomes a useful transportation management instrument to project maintenance interventions and unify safety standards over the whole provincial territory network. Among usership-centred services, particular attention has been paid towards the development and updating of information tools designed to provide timely information on road traffic conditions.

Usership-centred administrative activities:

Road usership-centred administrative activities concern the issuing of measures for the monitoring of various road uses and are geared towards the protection of the Trentino road heritage. This service is dedicated to issuing all clearances necessary for exceptional transport planning, the opening of closed roads, the construction and upkeep of sub-services, the installation of advertising billboards, etc.

Administrative activities for internal management:

Administrative activities for internal management concern the drafting of all documents in support of operational activities.

With particular regard to a road network which is typical of the Alpine range, as the Trentino network, with its valley-floor, hill and mountain roads certainly is, an expenditure of approximately € 20,000 per kilometre can be expected before labour costs and net of the movable and immovable property owned by the managing public body are taken into account. Roughly half this sum must be destined for management and ordinary maintenance purposes while the rest is assigned to meet the costs of extraordinary maintenance. Although the average daily traffic volume of mountain and valley-floor roads cannot be compared, management and maintenance costs are thought to be similar. While on the subject of costs, it is noteworthy that de-icing treatment and removing snow from roads 1,500 to 2,000 m above sea level implies an expenditure of €4,000 to €6,000 per kilometre, while at a lower altitude expenditure can be reduced up to fivefold for the same services.

The conservation and improvement of infrastructural engineering works such as bridges and tunnels is of particular importance for the Provincial Planning. In this programming perspective, the bridge management system (BMS) is of particular relevance. In place since 2002, it represents a database and monitoring standard allowing the archiving and processing of a large body of data regarding every single bridge. It also includes the main technical data and information provided by the visual inspection of bridges. The calculation of the degree of structural decay and the consequent definition of priority interventions and the movement of exceptional loads on individual structures are based on several characteristic indices of the state of structural preservation of the bridge and on some parameters to be factored in the planning of interventions on the infrastructure itself. An order of magnitude for the expenditure required to keep the entire bridge patrimony efficiently in operation can be provided by hypothesising a rate equal to zero and, given that a bridge's useful life is 100 years, distributing the construction costs of the bridge in question uniformly over a century:

Thus, BMS data reveal that the A.P.T. currently has 1136 road bridges (excluding cycling bridges) under management. The average bridge span is 32 metres. Hypothesising a mean re-construction cost of €18,000 per metre, an average cost of € 576,000 (or € 720,000 including taxes) per bridge can be calculated. With a useful life of 100 years, and assuming that all 1,136 bridges are new (an obviously optimistic estimate), it appears that over the next 100 years the A.P.T. will have to rebuild 1,136 bridges, amounting to approximately 11 bridges per year for a total outlay of €7,920,000 annually.

Below is a detailed table of the macro-activities described above stratified by specific area of activity.

DIRECT OPERATIONAL ACTIVITIES	Road and tunnel cleaning and green space management
	Snow removal and anti-icing road treatment service
	Maintenance and modification of horizontal and vertical signage
	Assistance to road users (traffic management, emergency assistance)
	Inspections of the state of bridges, viaducts, tunnels and engineering works in general
	Applying bitumen and patching road surfaces
	Erection and maintenance of safety road barriers

	Carrying out works on carriageways and their fixtures Bridge maintenance Carrying out works on defence barriers Installing and maintenance of technological fixtures Maintenance of means of transport
INDIRECT TRAFFIC MANAGEMENT ACTIVITIES	Integrated monitoring system for recording road traffic accidents, including wildlife road traffic accidents Management of data concerning the structural safety of tunnels, bridges and engineering works Providing information to road users.
ADMINISTRATIVE ACTIVITIES OF BENEFIT TO ROAD USERS	Transportation of exceptional loads Traffic access control and concession Advertising Other authorizations
INTERNAL ADMINISTRATIVE ACTIVITIES	Supporting operational activities

1.4. **Cross-border links**

Friuli Venezia Giulia

The Friuli Venezia Giulia Region considers that different national regulations may hinder the development of cross-border public transport services (train/bus/maritime services). Yet, the FVG region is linked to Austria (Villach) and Slovenia (Ljubljana) through direct railway services, also co-funded by EU projects – CONNECT2CE and CROSSMOBY respectively.

Slovenia

Links with neighbouring countries:

Slovenian motorway system is well connected with neighbouring countries Italy, Austria, Hungary and Croatia. There are missing links with Croatia, e.g. Postojna (SI) – Rijeka (HR). The future third development axis in the north will enable connection to Austria via Dravograd or Holmec towards Klagenfurt (AT) and in the south via Metlika (SI) to Karlovac (HR).

On the basis of Regulation (EU) No 1315/2013² on the development of the trans-European transport network for competitive rail transport, the Republic of Slovenia is committed to cooperating with other countries on individual corridors to establish two corridors, i.e.:

- Mediterranean Core Corridor: Almeria – Valencia/Madrid – Zaragoza – Barcelona – Marseilles – Lyon – Turin – Milan – Verona – Padova – Venice – Trieste/Koper – Ljubljana – Budapest – Zahony (Hungarian–Ukrainian border);
- Baltic-Adriatic Core Corridor (previously RFC 5): Gdynia – Gdansk – Katowice – Ostrava/Žilina – Bratislava/Vienna – Graz – Udine – Venice/Trieste – Bologna – Ravenna / Graz – Maribor – Ljubljana – Koper.

Regional transport connections could and should further improve in order to enable efficient mobility of people and goods between the neighbouring countries. In particular in relation to free mobility of people daily commuters with neighbouring countries

Styria

In the south of the Region of Styria is the border to Slovenia. In the east, the border to Hungary is not far. One railway line each goes cross the border. But the connections cross the border are very limited and are not linked up with the connections within the foreign countries. Bus services cross the border operate mainly on long-distance transport and leave the short-distance cross border transport beside. To strengthen the cohesion between the EU member states cross border services in public transport should be much more intensified.

² REGULATION (EU) No 1315/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU, OJ L 348/1

2. THEMATIC AREA

The impacts of the secondary network on environment and climate, including possible measures for improvement in particular by modal shift and traffic management

2.1. General Overview

No contributions received from AG4 Members.

2.2. Protection of territory, environment and climate

Aosta Valley

Aosta Valley underlines the need of better distribution of road traffic flows, otherwise there would be a risk of local population reaction (e.g.: hundreds of appeals to the justice for high pollution on French side of Mont Blanc tunnel).

Bolzano/Bozen

The Autonomous Province of Bolzano underlines that the problem of noise and air pollution due to extremely high levels of traffic (HGVs during the week and private cars during the week ends and holidays) and frequent traffic congestion on the motorway A22 is crucial. The motorway, due to structural conditions, cannot be enlarged.

Slovenia

Protection of the environment and inhabitants:

Most of roads are built with adequate protection against excessive noise pollution from road traffic for the living environment. At the crossings of state roads through settlements, protection is unregulated. As a rule, measures are taken for the controlled drainage of water from roads into the arrester through containers along motorways.

Protection of the environment and inhabitants from the impact of road traffic (noise, water):

The motorway system was built with many measures to protect the natural and living environment. The routes were chosen so that they were as nicely integrated into the environment and secured against the disturbance of traffic effects. Thus, most

settlements along motorways and expressways are protected by active anti-noise protection measures. Especially on old motorways anti-noise measures are being constructed on sections where they were not built at the time of construction. As a rule, active anti-noise measures have been built.

Much attention was given to the design of objects, tunnel portals, etc. Wildlife crossings (ecoducts, green bridges) are built to allow land-based creatures to pass safely from one side of the road to another. On several motorway sections underpass tunnels (mainly for large animals) and tunnels and culverts (for amphibian and small mammals such as otters and hedgehogs) are also included.

On national roads, these measures are less frequent. Particularly in the course of the settlements, the inhabitants at these roads are not protected against excessive noise.

Municipalities in which overwhelming majority of citizens live along the national roads are cities Maribor (7,697), Ljubljana (6,587), Velenje (4,494), Jesenice (5,858) and Celje (2,569). The population is the most heavily burdened by noise and emissions from traffic on national roads in the evening between 18 and 22 hours.

Styria

Styria highlights two aspects in sub-regions to consider within the task of protecting territory: On the one hand the central region around the regional capital Graz is stressed by high density traffic of all transport modes and air pollution caused by motor vehicles. On the other hand, as expounded in the context with accessibility of remote areas, the Styrian top touristic regions Enns-valley and Salzkammergut suffer from dense road traffic, in particular during high touristic seasons. Transport there should be shifted to more environmentally friendly transport modes.

2.3. Traffic management and modal shift

Bolzano/Bozen

The autonomous Province of Bolzano underlines that a specific working group within the EGTC Euregio is in charge to improve management of transport flows on the Brenner corridor by interregional cooperation. It could be helpful to involve also other regions, such as Bavaria or the Veneto Region, as the Brenner corridor in a European view goes from Verona to Munich.

Modal Shift: Implementation of combined transport subsidy system for combined transport. The Autonomous Province of Bolzano grants aids to the following companies located in the EU: OTM (multimodal transport operator) and railway

companies that do freight services on rail in the provincial territory. The aids are pointed to the development of provincial CT. They are related to the rail freight services and to the building, the management, the adjustment or the extension of railway infrastructures and/or of intermodal terminals. Different aids are provided for the Brenner - Salorno railway line or vice versa according to the different type of service (Accompanied Combined Transport - ACT or Unaccompanied Combined Transport - UCT). Criteria has been notified at the European Commission. Support measures are valid for ACT and UCT services and will start in 2018. There is the necessity to coordinate the subsidy system with neighbor countries.

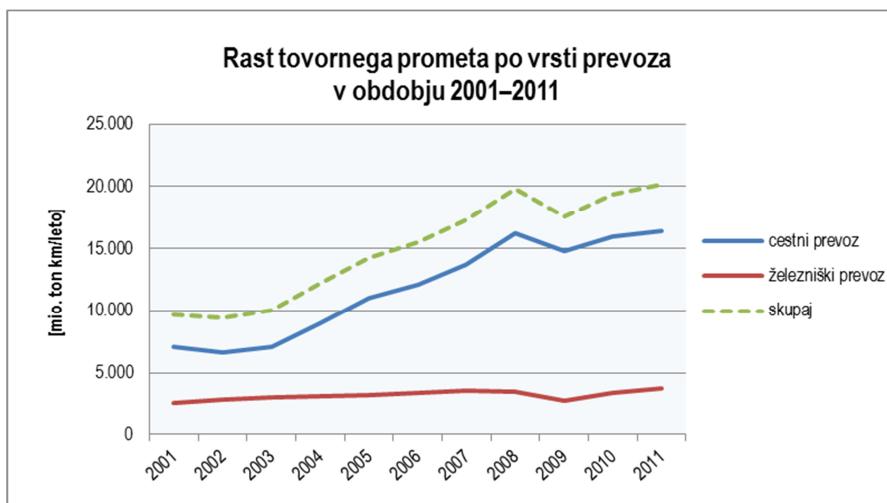
The Autonomous Province of Bolzano is currently working on the revision of concession contract for A22 motorway, including considerations to charge external costs and to practice higher tolls. The aim (iMONITRAF!) is to harmonize tolls on the transalpine corridors to avoid detour traffic. It is urgent to define a common position within the countries situated along the Brenner corridor.

Slovenia

Transport by roads:

Transport by private vehicle is constantly rising. From 1999 to 2011, transport increased by 32%. The average growth rate was about 3% per year. Due to the crisis, growth has been stagnating since 2008, and a decline in the volume of traffic has been detected in some areas. Once the economic growth is positive again, this mode of transport will also increase.

The use of road haulage vehicles also prevails in goods transport. While only 23% of transport in Slovenia is performed by rail, 77% is transported by road. Similar proportions also apply to other European Union countries.



Increase in freight transport by type of transport from 2001 to 2011 - Source: SURS. Legend: blue-Road, red-rail, green-both

International multimodal corridors:

TEN-T Core Corridors:

- **Baltic – Adriatic Corridor:** *Gdansk – Ravenna – Warsaw – Bratislava – Vienna – Ljubljana - Koper, Trieste, Venice - Ravenna*
- **Mediterranean Corridor:** *Barcelona – Torino - Ljubljana – Zagreb – Budapest – border with Ukraine, including indicative extension to Sarajevo and Belgrade*

Other Slovenian motorways are part of the TEN-T comprehensive network:

- *Already constructed: Ljubljana - Jesenice – border with AT (direction Salzburg)*
- *Under construction: Maribor - Ptuj – Gruškovje/ border with CRO (direction Zagreb).*
- *Planned new motorway: Postojna – Jelšane (border with CRO; direction Rijeka)*

Toll system in Slovenia:

Roads users are obliged to pay a toll for motorways and expressways. The following ways of collecting toll exist in Slovenia:

- a) Vignette tolling system is intended for vehicles with the maximum permissible weight up to 3.500 kg, regardless of the maximum weight of the trailer. You have to buy a vignette if you want to use a toll road.
- b) DarsGo system: the trucks (vehicles with the maximum permissible weight over 3.5 tones) pay a toll with manual collection or toll collection system without stopping at toll stations. The system was in past a combination of an open and closed toll system. From 1 January 2018, the toll collection for trucks is a microwave toll collection system without stopping. The entire motorway and expressway network with the total length of 618 km is divided into 126 toll sections. The price is based on the distance driven. Its amount is based on the length of an individual section and the characteristics of the vehicle, e.g. the number of axles and the EURO emission class.
- c) Karavanke tunnel: In addition to the fee for the vignette in Slovenia is the passage of certain road section charged another fee that can be paid when passing through the toll gates. Charging involves one tunnel only (Karawanken Tunnel).

If you drive from Austria through Kravanke tunnel in the direction of central Slovenia, the use of vignette is not mandatory till Hrušica junction. The toll for tunnel Karavanke is valid between first two junctions on the both sides of the state border (junction Hrušica in Slovenia and junction Rosenbach in Austria).

The Karavanke road tunnel is excluded from toll payment with regards to the EURO emission class for heavy goods vehicles (class 3 and class 4). Note: The toll is

charged only for the Slovenian part of the toll section. Information on how to pay the toll for Karavanke road tunnel from Austrian side can be obtained at ASFINAG (Austrian Motorway Toll Operator).

Transport by railways:

Analysis of competitiveness of transport corridors shows that the SW-NE direction (Baltic-Adriatic corridor and Mediterranean corridor) that runs through Slovenia is about 100 kilometres shorter than its competitors with regard to goods and passenger transport. Travel times are also 7% shorter through Slovenian. The road and rail corridors that run through Slovenia attract more goods and passenger transport than the competitors, i.e. 4% more goods and 20% more passenger transport. This means that the route through Slovenia is more attractive, economical, efficient and suitable in comparison to the competitors. By modernising the railway corridors through Slovenia, the quantity of goods transported by railway is significantly higher than the quantity on the competitive corridor (by approximately 19% through Slovenia and 6% on the competitive corridor). Due to the shorter connection, 7% less energy is used on Mediterranean corridor, which runs through Slovenia, and there are 7% less CO2 emissions than on the competing corridor.

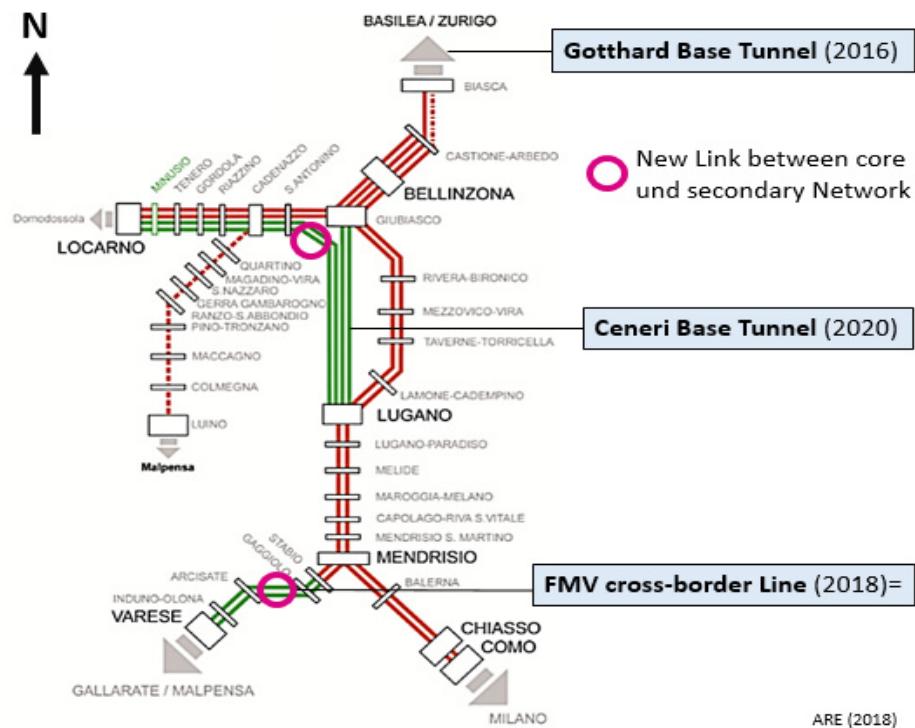
The NW-SE direction or railway Pan-European corridor no. X that runs through Slovenia is also shorter than its competitors, i.e. by more than 100 km for goods transport and more than 200 km for passenger transport. Travel times are also shorter for goods transport (about 12%) and passenger transport (about 20%). The railway corridor through Slovenia also attracts 12% more freight transport due to the shorter connection. Competitive corridor is more favourable for passenger transport, mostly because it connects big cities (Vienna, Budapest) and Bratislava (which is twice the size of Ljubljana), thus attracting 34% more passengers than those travelling through Slovenia. A). Passenger rail transport is in any case more inclined towards the competing corridor. When transporting goods through Slovenia in the NW-SE direction 12% less energy is consumed, and air pollution is 12% lower.

Regional railway network that is of utmost importance for commuters to the two largest cities Ljubljana and Maribor is not electrified yet. Modernisation and/or upgrading are necessary to attract more passengers in near future.

Ticino

In parallel to the construction of the new transalpine railway tunnel at the Gotthard (NEAT), the Swiss Canton Ticino has introduced a policy of innovative and sustainable mobility that exploits the main axis to strengthen the polycentric territorial development. This was possible thanks to two fundamental projects between the main and secondary networks:

- A link at the north portal of the Ceneri base tunnel CBT (opening 2020) which allows rapid connections from Lugano to Locarno through the new tunnel without the need to transit Bellinzona and change direction there.
- The new Mendrisio-Varese line (FMV) which connects Como / Lugano to Varese via Mendrisio with continuation towards Gallarate (Sempione-Lötschberg axis) and Malpensa airport.



These two "small" infrastructural projects - the FMV has a length of only 17 Km already partially existing and the bridge to the CBT is about 1Km - allowed a better integration of the new Gotthard axis in the secondary system of regional and cross-border railway networks

Despite the excellent integration of secondary and primary networks from an infrastructural point of view, problems of operability remain (timetables, punctuality, tickets).

Nevertheless, ticketing for cross-border services are different in Italy and Switzerland. The Italian pass/ticket is based on mileage, while the Swiss pass/ticket is based on the number of zones crossed during the journey.

In Switzerland the pass/tickets make a free mobility in the Swiss tariff zones possible, in Italy it is only for exclusive use of regional trains.

Trentino

The autonomous Province of Trento is committed to promote the shift from road to rail since the beginning of the programming of the Brenner Axis, in line with the rules of the UE, national legislation and in the exercise of its powers and responsibilities. The main actions defined in its programming documents and acts affirm the involvement of the Province in the Ten T objectives, even considering the strong consistency of traffic flows along the Adige Valley and side valleys, the congestion due, in part, to diverted traffic on the motorway and the necessity to assure environmental, economic and social sustainability.

The attendant opportunities which, from 2027 on, may (or may not) accrue to the territory with the construction of the Brenner Base Tunnel and its potential accessibility will be in proportion to their degree of infrastructural “readiness”, among other factors, and will depend on their being implemented to meet the needs of millions of people from Germany and other countries to the north. Spatio-temporal distances will be markedly shortened for these people and will fall within the four hours set to separate even the farthest reaches of the German orbit from this Euro-region and from our principal cities;

The process which will irreversibly involve our regions and the need to take into account the fact that, if today's traffic “bottle-neck” is the road section for which a tunnel is under construction, from 2027 (unless the most determined political and administrative actions are undertaken at Euro-region, national and community levels) this bottle-neck may well be the historic transit route which runs through Bolzano, Trento and Rovereto. This will create severe problems, as while less than 100 trains currently run through these cities on a daily basis, the transited area in the urban environment of Trento is already fraught with critical issues and potential social and juridical conflicts (such as noise, vibrations, urban decay and environmental group actions). With more than 400 trains transiting everyday through the cities, the situation would become unsustainable, barring the moving of entire neighbourhoods. This is why the question of access route sections, far from being secondary, is essential if the full potentialities of the tunnel are to be realised from the start, with the transfer of freight transportation from road to rail. As for the current situation, this is the pass with the lowest modal switch over the entire Alpine region, with less than 30 per cent of goods transiting by rail while 70 per cent remains road-bound.

The Province is active in many international organisms which are working on transport themes for the Brenner Corridor, but at the same time, in a wider view on Alpine areas, in order to build networks, and to promote common perspectives and integrated decisions and actions. Among these it is possible to remember the

involvement in the Brenner Corridor Platform, in the Cab (as President in the last four years) in the Euregio, in iMonitraf, in EUSALP.

The main objectives and actions regard an active commitment in modal shift, introduction of environmental and economic measures to promote sustainable mobility:

1. actions for better integration of all modes, such as organization of public transport (measures on timetable, ticketing etc.), agreement between Interporto of Trento and Rfi SpA for new infrastructural projects and management of rail freight transport;
2. the financial contribution and support to the realization of the Brenner Base Tunnel, and the involvement in the realization of its south access routes;
3. Shareholding in A22 Motorway, which concession is currently under revision and which is committed in consistent investments to ensure better sustainable conditions, cross financing of Brenner Corridor, use of new transport technologies;
4. subsidies to promote Rola transport and to finance electric mobility both with infrastructural measures and direct support for private cars;
5. update of data on rail and road flows;
6. partnership in Eu project for introduction of accompanying measures along the A22 Motorway, such as reduction of speed limit (BrennerLec Project)

Tyrol

In Tyrol the regional road B171 which is managed by the Land runs parallel to the main motorway A12 through the lower Inn valley. To prevent a diversion of HGV which are charged road toll on the A12 to the regional road, driving bans on some sections of the B171 prohibit HGV over 7.5 tons have been implemented. The objective is to limit heavy goods traffic to the main artery of the transport network in Tyrol (A12 and A13 motorways) to guarantee traffic safety and fluidity for cars on the secondary road network. This driving ban could be considered exemplary also for other regions in EUSALP struggling with the negative side effects of imposing higher road tolls for HGVs on the main Alpine transit corridors.

In an EUSALP perspective very important is to manage the transport flows by reducing the impacts of heavy goods vehicles and, in particular, transit traffic to the local population and the regional economy.

2.4. Ports and inland terminals

PORTS

The reason of an in-depth analysis on ports is based upon a fundamental aspect of the EUSALP Action Plan, especially of Action 4 that establishes “To promote intermodality and interoperability in passenger and freight transport”.

As the topic of the 3rd Mobility Conference focuses on the relevance of secondary networks considered as “[...] fundamental to connect the territories of the Alpine regions with the main infrastructures” it is important to include in the discussion the position of ports in order to implement efficiency and opportunities and to promote a better interaction for all modes of transport and help their development.

The issue of secondary networks should be addressed in full synergy with the core networks, especially to clearly understand the role of EUSALP ports that, by definition, need to be directly connected with the main transport networks.

In this sense the analysis of the EUSALP port system should be performed within the geography of communication of this Alpine macro-region and of the more general Trans European Network-Transport (TEN-T). In fact, EUSALP is not a European island; it is rather a macro geographic node of this continent.

Only a strong integration of ports and combined transport terminals with the Trans European Network-Transport (TEN-T), as recently defined by the EU Regulation 1315/2013 characterized by the "core" and "comprehensive" network, can help to reach one of the essential objectives of EUSALP, i.e. “to ensure accessibility and connections to all the inhabitants of the Alpine region”. Accessibility and connections are obviously referred to passengers and freight.

Ports in the EUSALP Macro Region are located in the south of France – Nice and Marseille, north of Italy – Savona, Genova, La Spezia, Venezia and Trieste, and Slovenia – Koper/Capodistria. Considering the North of Italy it is characterized by a system of “Port authorities” as shown in the upper image on page 39.

These are connected to a system of “inland terminals” and “Logistic Platforms” prevalently located in the North of Italy, in EUSALP geography, as shown by the following images.

Always considering the North of Italy “[...] it could be seen “as a single big platform for the logistic networks based on strong port, airport, combined transport terminals systems with important functions for the mobility of freight [...]”³.

Therefore, the construction of a governance of the mobility system is of crucial importance to enable a solid development of all transport infrastructures with no exceptions (roads, railways, ports, combined transport terminals, water ways, airports), since each of them has a precise transport peculiarity. In this sense a governance should first modernize the infrastructural system in line with the European documents (White Paper for Transport, Connecting Europe Facility Transport) starting from the strengthening of the European corridors especially by networking as much as possible the Comprehensive Network of the TEN-T and all secondary networks in order to adequately connect the territories, including “weak ones”.

Veneto Region has coordinated the inputs on ports for the Ports of Liguria, Veneto and Friuli Venezia Giulia. It is of evidence that the port industry in the European Union generates important economic effects on port employment and the supply chain, and in the forecasts of the European Commission there should be a 50% increase of the goods managed in the ports of the European Union. This increase represents an opportunity of economic growth and the creation of hundreds of thousands new jobs. The development of the core ports should not be separated from a connectivity strategy that shall include also the strengthening of the secondary networks.

EUSALP has a crucial geographic interface represented by coastal areas, true gateways to Europe for the goods coming from the Mediterranean Sea and the global maritime system. In this sense are highlighted some strategies such as identify the missing sections of the TEN-T networks that involve directly the logistic node, take advantage of current and future European Funds for strategic investments, define new ways of managing the port system and its connections with the territory also by developing integrated plans, complete the dry port infrastructure as well as railways and roads accessing ports, verify the coherence of the supply of intermodal structures on the territory.

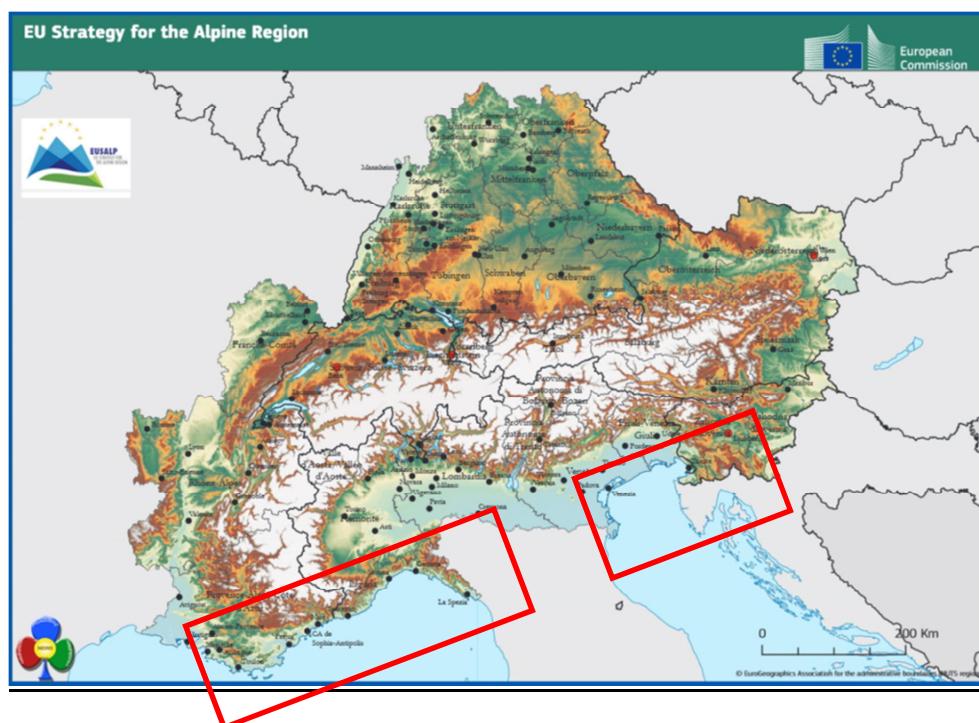
Regional Inputs on Ports by Veneto Region:

This proposal is based upon a fundamental aspect of the EUSALP Action Plan, especially of Action 4 that establishes “*To promote inter-modality and interoperability in passenger and freight transport*”.

The preparatory group of the *Mobility Conference* in Trento in June 2018 focuses the attention of the EUSALP members on the issue of the secondary networks considered as “[...] fundamental to connect the territories of the Alpine regions with the main infrastructures. At the same time, the secondary networks help the efficiency of the core networks and have a wide economic impact [...]”.

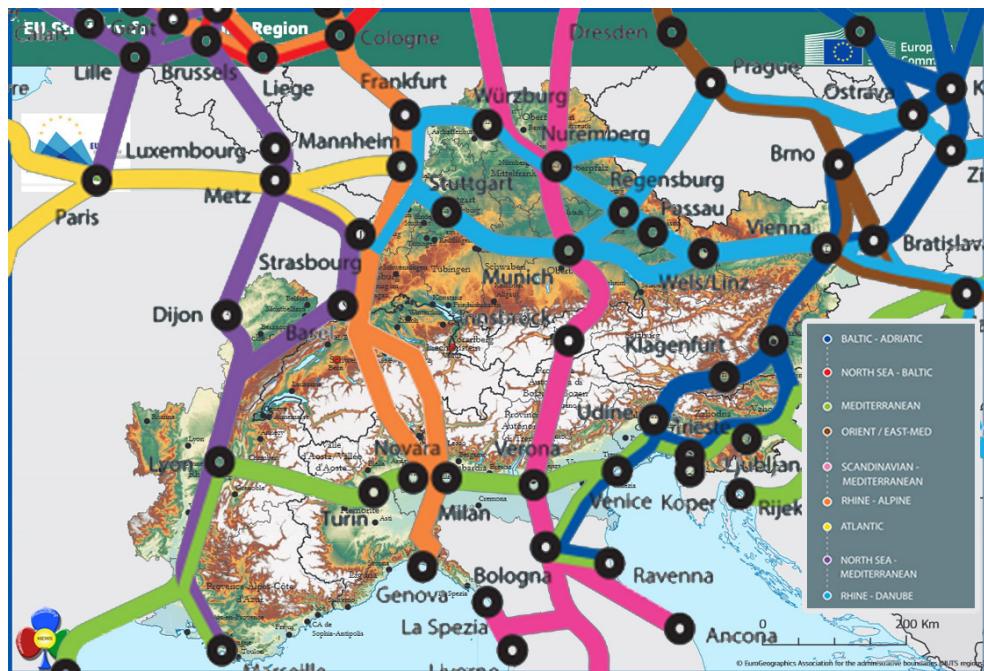
Assuming that these secondary networks should be “[...] diffused and interconnected with the main roads [...]” in order to help the “[...] future economic development of the Alpine Region and to connect people by giving them equal opportunities both in urban and remote areas. Therefore, the main objective of the third EUSALP mobility conference is to identify the possible innovative use of the secondary networks as essential parts of a system of efficient and functional transport, but also as infrastructures with their own importance and identity for ensuring equal life opportunities and economic growth to the inhabitants and for creating profitable relationships between the diverse needs and conditions [...]”.

However, the issue of the secondary networks should be addressed in full synergy with the core networks, especially to clearly understand the role of EUSALP ports that, by definition, need to be directly connected with the main transport networks.

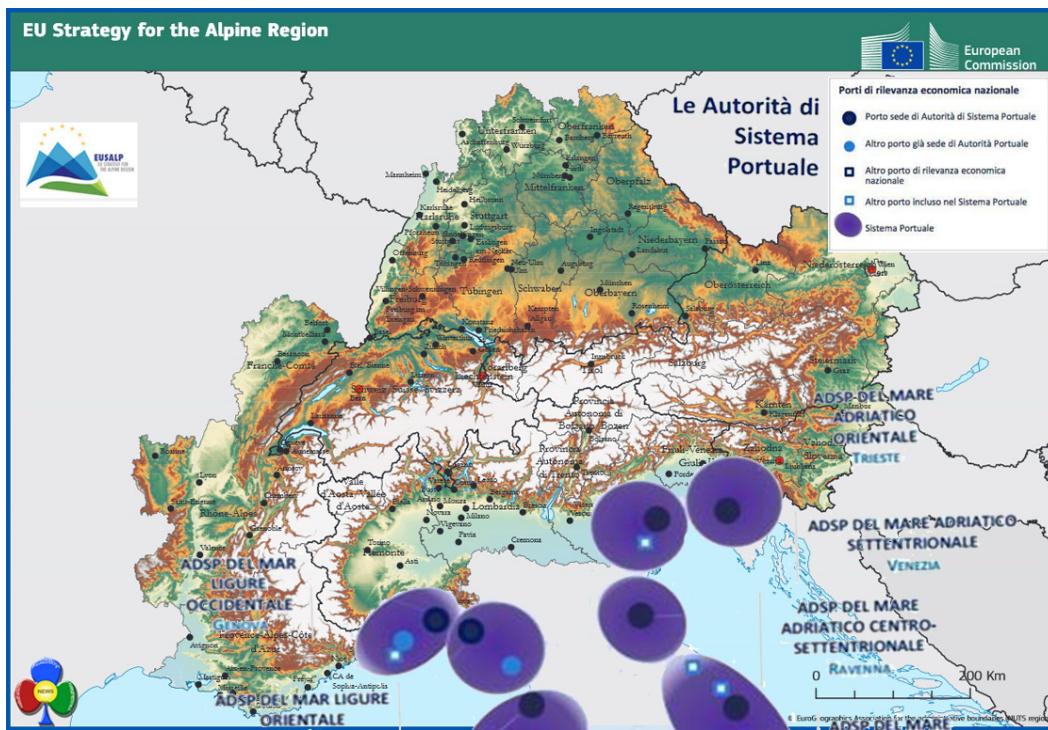


In this sense the analysis of the EUSALP port system, recently introduced in the work agenda of the AG4, should be performed within the geography of communication of this Alpine macro-region and of the more general Trans European Network-Transport (TEN-T). In fact, EUSALP is not a European island; it is rather a macro geographic node of this continent.

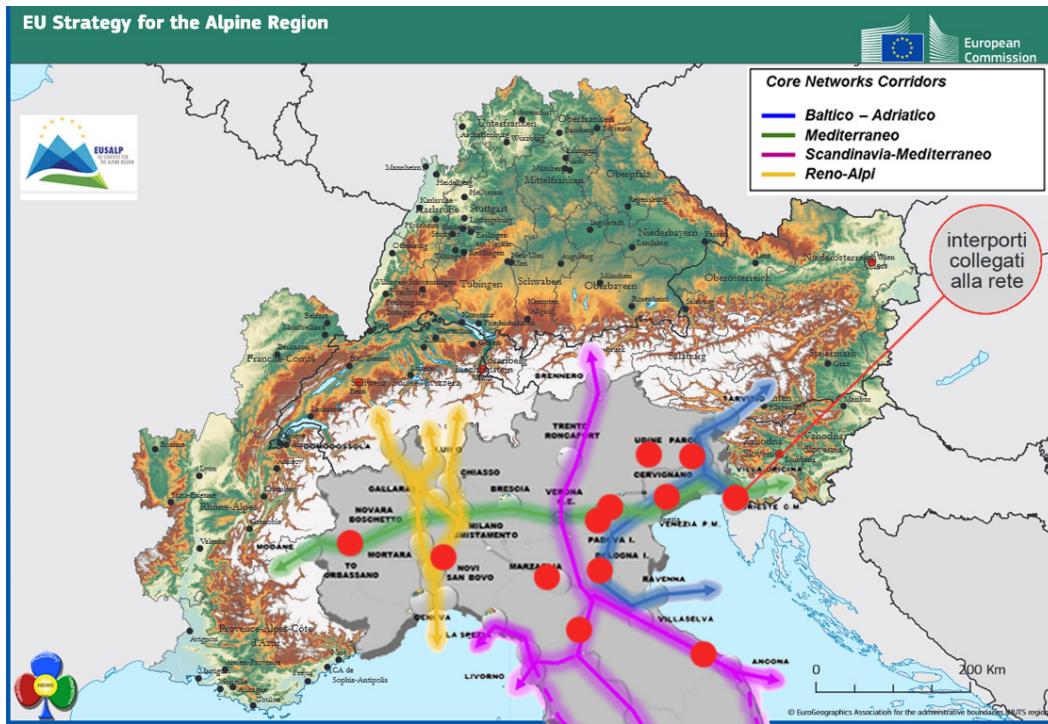
In fact, only a strong integration of ports and interports with the Trans European Network-Transport (TEN-T), as recently defined by the EU Regulation 1315/2013 characterized by the "core" and "comprehensive" network, can help to reach one of the essential objectives of EUSALP, i.e. *"to ensure accessibility and connections to all the inhabitants of the Alpine region"*. Accessibility and connections are obviously referred to passengers and freight. The following image represents the geographical position of EUSALP in the TEN-T.

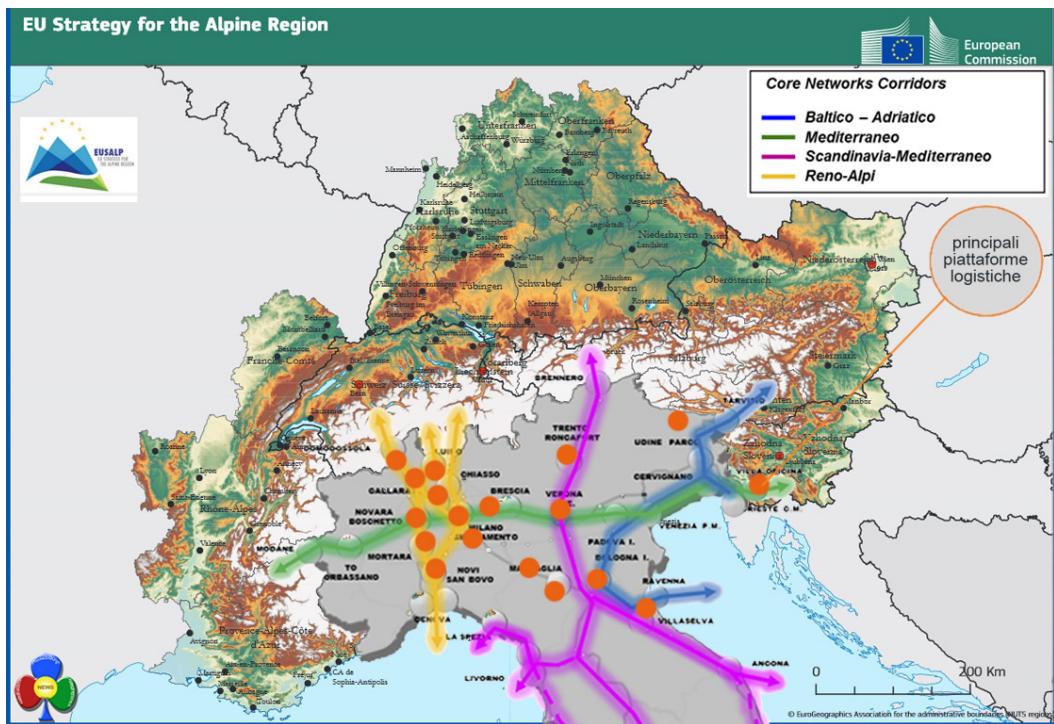


The North of Italy is characterized by a system of "Port authorities" as shown in the following image.



These are connected to a system of “Inter-ports” and “Logistic Platforms” prevalently located in the North of Italy, in EUSALP geography, as shown by the following images.





A Vision of mobility in EUSALP:

From a methodological viewpoint, the different EUSALP Mobility Conferences should be able to answer some questions that have been properly synthesized in the document called “Manifesto for an integrated and sustainable mobility of the Alpine Macro-Region” of June 2017 drawn up by the EUSALP⁴ Italian Industrial associations (Confindustria).

It is necessary to have a *vision* of mobility in EUSALP beyond the “selfish localisms” that oppose the European foundations of cooperation and cohesion. This *vision* can be realised only with proper transport systems considering that, for example, the North of Italy “[...] acts as a single big platform for the logistic networks and is based on strong port, airport, inter-port systems with important functions for the mobility of freight [...]”⁵.

Therefore, the construction of a *governance* of the mobility system is of crucial importance to enable a solid development of all transport infrastructures with no exceptions (roads, railways, ports, inter-ports, airports), since each of them has a precise transport peculiarity.

⁴ ASSOIMPRENDITORI Alto Adige, CONFINDUSTRIA Friuli Venezia Giulia, CONFINDUSTRIA Liguria, CONFINDUSTRIA Lombardia, CONFINDUSTRIA Trento, CONFINDUSTRIA Piemonte, CONFINDUSTRIA Valle d'Aosta, CONFINDUSTRIA Veneto, June 2017.

⁵ ASSOIMPRENDITORI, Ibidem.

The *governance* should first modernize the infrastructural system in line with the European documents (*White Paper for Transport, Connecting Europe Facility Transport*) starting from the strengthening of the European corridors especially by networking as much as possible the *Comprehensive Network* of the TEN-T in order to adequately connect the “weak” territories with the “strong” ones.

EUSALP should activate working methods to prove that its constitution is a plus in the European strategies.

The whole macro-regional strategy should recognize the dynamics of intra-national and international competitions between ports, but at the same time harmonize them in a non-local vision. In this sense, the Italian members of EUSALP recall a balanced passage of the National Strategic Plan for Ports and Logistics (2015) “*Changes in the demand served by Italian ports towards foreign competitive areas. In particular, these landlocked areas are prevalently concentrated in the Alpine Region and in Central Eastern Europe, that are those continental areas where the overall performance (times, costs) of intermodal transport chains can make the Northern Range and the Southern Range equally competitive*”.

[**Developing and integrating ports and inter-ports in EUSALP:**](#)

There is no doubt that the port industry in the European Union generates important economic effects on port employment and the supply chain. It should be noted that the costs and quality of port services could account for a significant percentage of the total costs of the logistics chain, up to 40% - 60% of the total costs for the companies that use short-sea shipping.

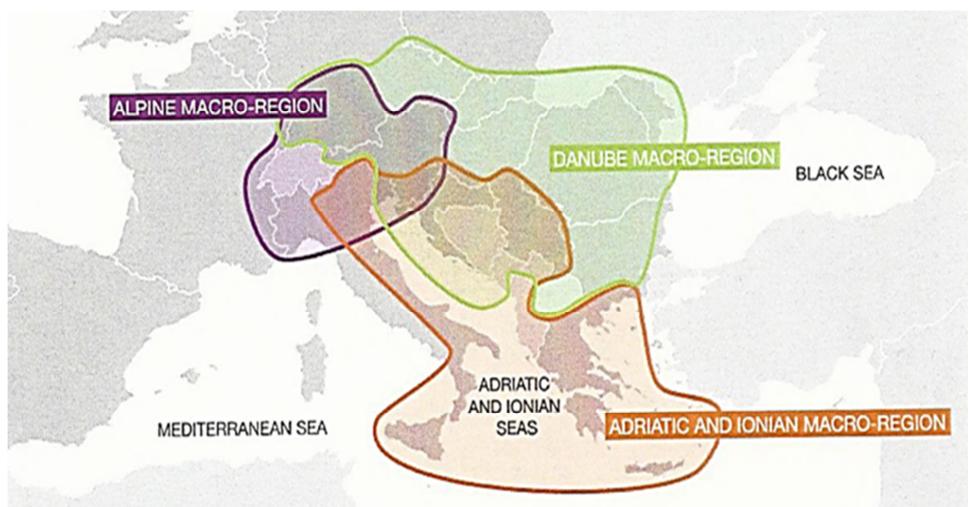
If the forecasts of the European Commission prove to be right, by 2030 there should be a 50% increase of the goods managed in the ports of the European Union. This increase represents an opportunity of economic growth and the creation of hundreds of thousands new jobs.

With their connections, the ports and inter-ports are already an important component of the TEN-T corridors (the mobility of the Alpine macro-region should be read in this perspective, as also shown by the EUSALP Meeting of Garmisch-Partenkirchen of February 2017), and the development of the core ports (and at the same time of the comprehensive ports that have been incorporated in the AdSP) should not be separated from a connectivity strategy that shall include also the strengthening of the secondary networks.

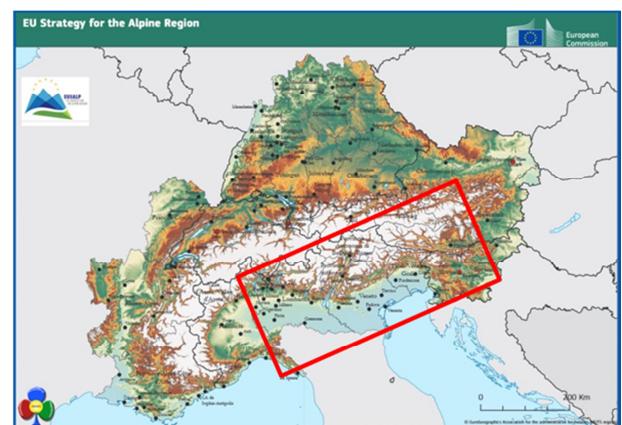
Role of ports in the geography of the European macro-regions: EUSALP, EUSAIR and EUSDR:

EUSALP has a crucial geographic interface represented by coastal areas, true gateways to Europe for the goods coming from the Mediterranean Sea and the global maritime system.

The EUSALP port system in the eastern part of this macro-region offers a great potentiality since it can serve two other european macro-regions such as those of EUSDR and EUSAIR.



In fact, the Italian Regions of Friuli-Venezia Giulia, Veneto, Trentino- Alto Adige and Lombardy, as well as the State of Slovenia, members of EUSALP, are also involved in the EUSAIR macro-region, while the territories of Austria, Slovenia, Baden-Württemberg and Bavaria (in Germany) are included in EUSALP and EUSDR areas.



This juxtaposition can produce a virtuous economic synergy by increasing mobility, one of the strategic objectives shared by these European macro-regions, which should be vigorously pursued since the European Commission encourages an inter-pillar approach between strategies.

EUSALP ports and inter-ports do not have just a European dimension but also a global one. In fact, thanks to the expansion of the Suez Canal and the re-launch by China of the new “Maritime Silk Road” they have become the Mediterranean terminals of world trade.

In this intertwined geography between sea and mountain routes, it becomes essential to realise an efficient system of primary and secondary connections that may develop from and to the ports, within EUSALP and in connection with bordering macro-regions.

Proposals for a work plan (Input by Veneto Region):

On the basis of the recommendations previously expressed, the issue of Ports can be discussed in the next Mobility Conference in Trento, highlighting the following strategies:

- a) Identifying the missing sections of the TEN-T networks that involve directly the logistic nodes, in order to ensure the construction of a network in EUSALP closely connected with extra-European areas, by also including all connections with Alpine roads.
- b) Taking advantage of current (European Fund for Strategic Investments -EFSI- of the Juncker Plan, Connecting Europe Facility Programme) and future European Funds for strategic investments. It is necessary to define the priorities for the public and private finances in order to ensure the necessary equity for investment;
- c) Promoting a systemic action to write the expenses for the TEN-T infrastructures out of the Stability Pact;
- d) Defining new ways of managing the port system and its connections with the territory also by developing integrated plans for the development of infrastructures with the reference Regions;
- e) Completing the dry port infrastructure as well as railways and roads accessing ports, by helping their integration in port master plans to create systemic infrastructures;
- f) Enhancing the value of the public support for actions aimed to develop rail transport in the macro-regional logistic network.
- g) Verifying the coherence of the supply of intermodal structures on the territory: the synergy between ports and inter-ports are not always obvious. The

integration between two bordering systems is essential in those realities where ports are limited in space and therefore the inter-ports are used as dry ports. However, when ports are located in wide areas they can become intermodal nodes for both sea freight and goods in the hinterland. (In fact, in the Italian case, Law 169/16 has introduced the logistic function also for ports and port areas).

These strategies can be realised following a time schedule of the below actions:

- Macro-regional communication project to explain that the Mediterranean ports are EUSALP ports;
- Alignment of the EUSALP mobility strategies with the recent revision of TEN-T;
- Systemic coordination of EUSALP ports;
- Projects of the missing EUSALP networks (Comprehensive Network) in relation to EUSALP ports;
- Strengthening of the connections between ports and inter-ports in EUSALP;

First suggested time schedule

Activities	2018	2019	2020
Macro-regional communication project – Mediterranean ports are EUSALP ports				
Alignment of EUSALP mobility strategies with the TEN-T revision				
Systemic coordination of EUSALP ports and inter- ports				
Projects of the TEN-T missing networks (Comprehensive Network) in relation to EUSALP ports and inter-ports				
Strengthening of the connections between ports and inter-ports in EUSALP				
.....				

[Other Regional Inputs on Ports by AG4 Members:](#)

Bolzano/Bozen

The autonomous Province of Bolzano suggests that Ports and Interports/terminals must be seen from a macro regional point of view as they are strongly related to the whole existing network of transport (roads and railways).

Carinthia

To better coordinate intermodality and to face challenges, strengths and weaknesses, as well as growth potential and needs Carinthia suggests fostering cooperation and communication between ports and hinterland hubs, to identify operational bottlenecks and services which can be shifted to the hinterland (i.e. customs clearance). Setup of an independent platform for sharing of data between the different transport modes, to improve inefficiencies along the whole transport chain.

Liguria

As regards Liguria Region, the unquestioned port background of its economy, which the ancient chroniclers had already understood as the root characterizing the regional territory, was / is / will be the main dimension of the development of the Region: the economy is born in the port as a place of attraction goods, the port is flywheel and motor, the trade penetrates beyond the riviera and innervates valleys in a same and opposite way respect to the rivers. Actually, we can speak of the Ligurian maritime cluster centred on the Genoa-Savona-Vado and La Spezia poles.

The "Ports and Logistics" survey (May 2012) edited by the Cassa Depositi e Prestiti systematically analyses the national system of port activities with amplitude, also in a EU and international key. From it, as regards Liguria, we can deduce some key elements:

- the high national accessibility of the North Tyrrhenian arc, central for international connections especially with the Far East;
- the variety of cargo tonnages in relation to the draught of the port areas as an element of diversification of the maritime routes;
- the regard of the Sino-Soviet mobilisations with respect to the complete renewal of the railway sections that could re-marginalize the Mediterranean, which given the impetuous economic growth of the East is central thanks to the strategic position of the Suez Canal and therefore the ports Mediterranean people must invest in competitiveness;
- the incidence of the cost of logistics in the market economy and the incidence of cost items of the logistics chain, which now lead to an imbalance in favour of road transport;
- the need to identify, plan and program integrated services that include processes for the transformation of goods capable of generating added value;

- the need to govern the processes in view of the efficiency of combined transport (safety and security, optimization of intermediate reloading, speeding up the door-to-door) in a broader and more comprehensive governance action of which the public body superordinate would have the coordination;
- the need for a synergic strategy that makes the Ligurian ports a system able to occupy share of contestable market.

As a whole, considering the contributions in terms of goods traffic and VAT revenue, the Ligurian ports generate 52.7% of container traffic (non-EU) and about 38% of port VAT. The Ligurian port system as a privileged maritime access to the market of northern Italy and, in perspective, of the centre of Europe, has shown, even in times of crisis, a solid resilience and important growth indication.

This framework has been represented in the National Plan of the Ports and Logistics and in the National Documents of Economy and Finance of the last years. Moreover, from 2012 until today Sino-Soviet mobilizations have taken shape in the "New Silk Road", which represents a unique challenge for the major ports of the Adriatic and Ligurian Sea. Likewise, with the 2016 reform, a first rationalization of Italian ports was achieved, through system's mergers.

The Ligurian ports face the triple challenge of increasing accessibility (both on the sea, e.g. the new dams, both on the landside, e.g. rail and road last mile: Gronda di Ponente, Piano del Ferro di Sampierdarena, new tracks in La Spezia), information and services (preclearing, UIRNET, single customs window, TSI), capacity increase (fillings, new basins).

The natural competitiveness within the national system is an indisputable fact. But the EUSALP Macro-region would act in solid force to bring the Ligurian ports too closer to the transalpine market. In Switzerland, in particular, significant investments have been made on the railway network, and goods to/from Italian ports are indispensable for implementing the new transport offer.

The key is the rail transport from/to the ports towards Switzerland and South of Germany, facilitated by many investments of RFI and by the incentive granted for the three year period 2018-2020 by the State and by the NW Regions. Heavier and longer trains will make rail transport cheaper, reducing the overall air emissions and negative externalities.

The Governing Body ("Cabina di Regia") of the NW Italian regions has highlighted that the port is no longer an autonomous centre of operations, but a link in the logistics chain, where the inland terminal (RRT, MTO ...) play an essential role. For

the Ligurian ports they stay in the Liguria-Piedmont-Lombardy macro-region. Performing load carriers, appropriate sidings, innovative technologies can turn Inland Terminal into re-launching sites to a more sustainable railway mode.

Friuli Venezia Giulia

Friuli Venezia Giulia highlights a weak coordination among freight transport stakeholders on both sides of the Alps and the need for enhanced cooperation between ports, railroad terminals, freight forwarders. The Region points out that growth potential undoubtedly derives from enhanced intermodal connections.

Slovenia

Considering maritime and air transport Slovenia pays special attention to faster development and the expansion of the Port of Koper as the most important source of cargo for the transport network of Slovenia, Central and Southeast Europe.

An equivalent level of concern for faster and better development should also be given to Slovenian airports, with emphasis being placed on the development of the Ljubljana Airport, and their actual development mostly depends on concession contracts or investments of their owners. The Republic of Slovenia will promote their development in accordance with its competences.

In the past eleven years, freight transport at the Port of Koper increased by an average of 5.6% annually, passenger transport at Ljubljana Airport increased by 3% and freight transport by 8.5%. In the past years, transport at the port and at the airport increased relatively rapidly. A decrease in transport was noted only couple of years after 2008. Since 2013 is again increasing. Contrary to goods transport passenger transport continued to decrease and shows slight increase only last two years.

INLAND TERMINALS

Intermodal terminals are the infrastructural nodes that grant the storage and the transhipment of loading units from one transport mode to another. The Alpine macro-region includes 100 main intermodal terminals: 18 are located in Austria, 9 in France, 37 in Germany, 21 in Italy, 4 in Slovenia and 11 in Switzerland (see Figure 1). Their relevance and the quantity of goods handled may depend upon several factors.

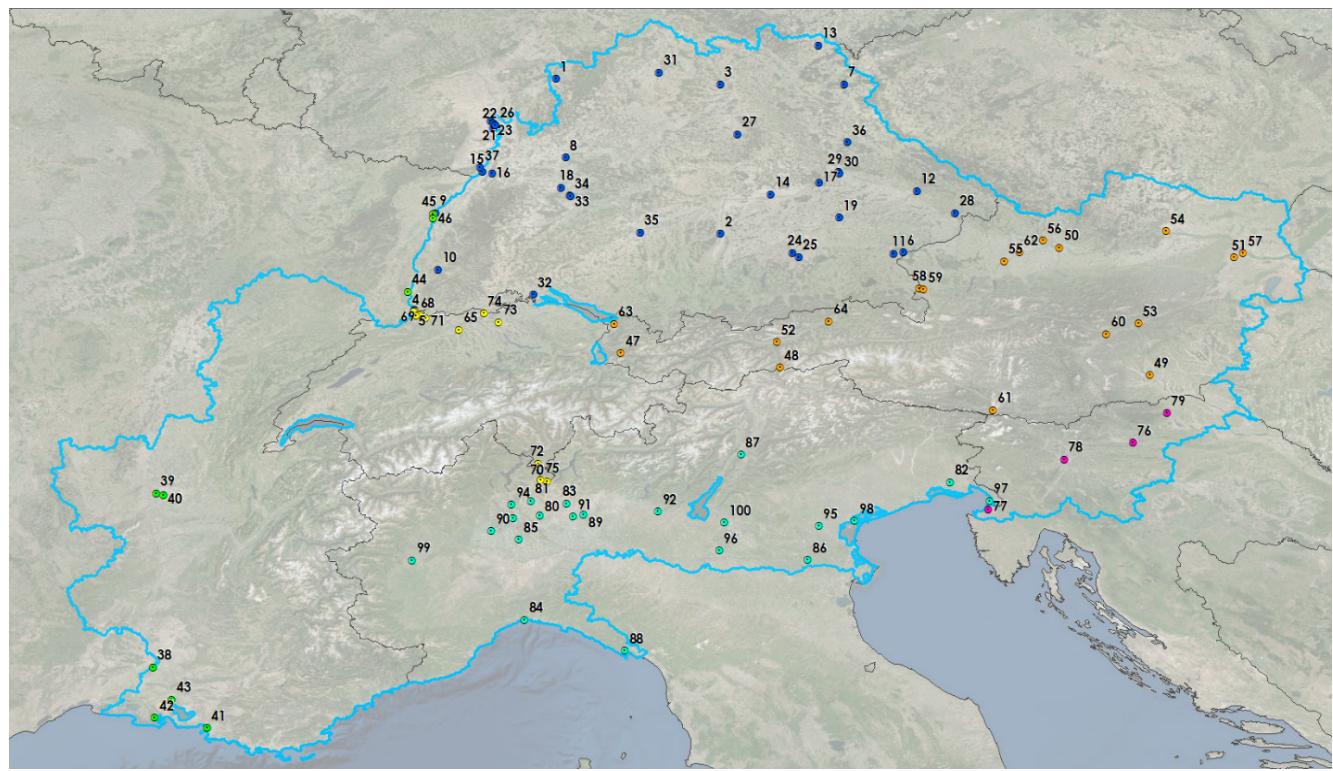
The proximity of the terminal to the main transport infrastructures, such motorways, highways, railways, inland waterways and sea highways characterizes its accessibility, which, on turn, affects the types of relationship, the origin and destination of the goods and the frequency of the services.

Also, the transport modes characterize the intermodal terminals. In the framework of the Alpine macro-region, two main types can be identified: the maritime and the

continental one. The former is related to the presence of important international ports (e.g., Trieste, Venice, Genoa). The service can be carried out either in two (ship – road) or in three steps (ship – rail – road). The latter, which are the most numerous, includes terrestrial transport modes (road and rail). Finally, some intermodal centers located along the main rivers are also present (e.g., Weil by the Rhine, Enns Hafen by the Danube): they may use barges, boats or ferries for commercial trades, in combination with road and rail.

A third element is represented by the facilities and services that guarantee a competitive transhipment. The typical process performed in an intermodal terminal includes the cargo check, the export treatment of the container, the processing of the consignment by the agency of the operator, the temporary storage, the loading onto the freight wagon and the composition of the train. Aspects related to the performance of an intermodal terminal may include the equipment, the technologies, the services and the surfaces available. Several methods can be used. A main distinction is between Accompanied and Unaccompanied Combined Transport, where the tractor unit, respectively, does and does not accompany the load unit. Unaccompanied Combined Transport includes several systems for the transhipment of non-craneable, craneable trailers, containers and swap bodies.

The services provided are classified in several ways, but the most common services are grouped into two classes. The first one is related to the basic handing of the different loading units, whereas the second involves the supplementary services regarding security, customs, container maintenance, container repair, container cleaning, dangerous goods, reefer, trucking, etc.

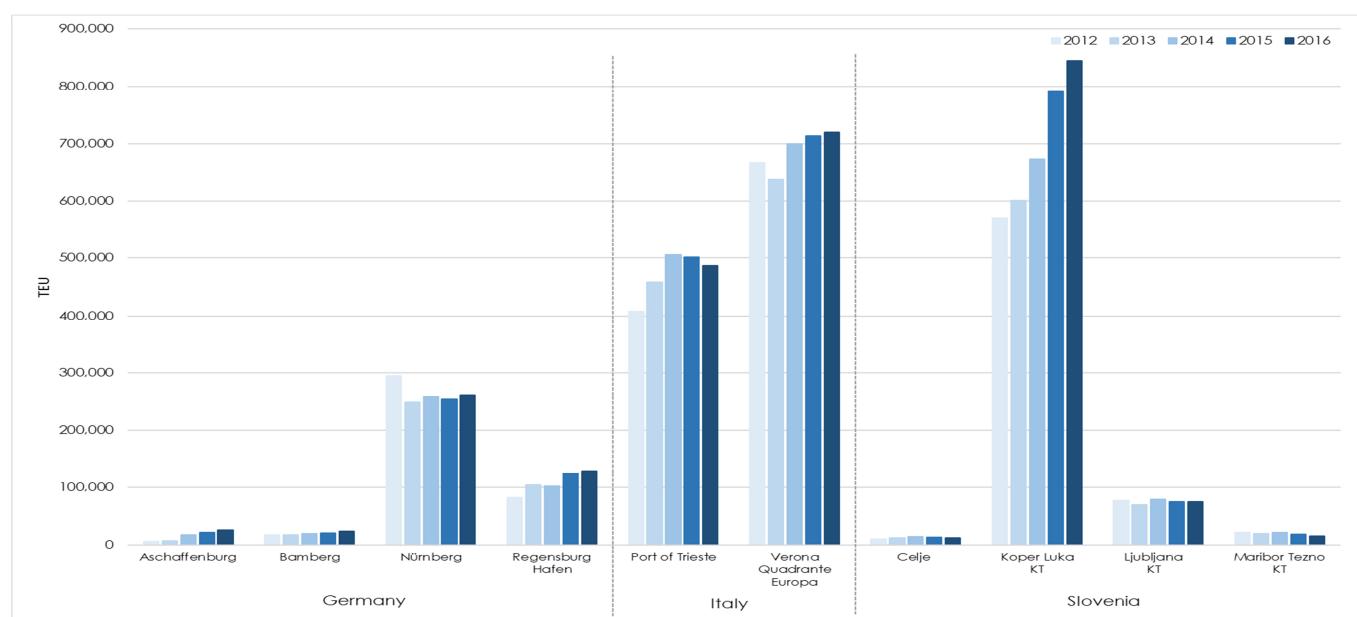


1	Aschaffenburg (DE)	26	MCT Mannheimer Container Terminal (DE)	51	Güterzentrum Wien Süd (AT)	76	Celje (SI)
2	Augsburg-Oberhausen (DE)	27	Nürnberg (DE)	52	Hall i. T. CCT (AT)	77	Koper Luka KT (SI)
3	Bamberg (DE)	28	Passau (DE)	53	Kapfenberg CCT (AT)	78	Ljubljana KT (SI)
4	Basel - Weil am Rhein (DUSS) (DE)	29	Regensburg Hafen (DE)	54	Krems a.d. Donau CCT (AT)	79	Maribor Tezno KT (SI)
5	Basel - Weil am Rhein (Rheinhafen) (DE)	30	Regensburg Ost (DE)	55	Lambach (AT)	80	Arluno (IT)
6	Burghausen (DE)	31	Schweinfurt (DE)	56	Linz Stadthafen CCT (AT)	81	Busto Arsizio-Gallarate (IT)
7	Cargo Center Bayern (Wiesau) (DE)	32	Singen (DE)	57	Port of Vienna (AT)	82	Cervignano (IT)
8	Container-Terminal Hafen Heilbronn (DE)	33	Stuttgart Container Terminal SCT (DE)	58	Salzburg CTS (AT)	83	Desio (IT)
9	Euro Terminal Kehl (DE)	34	Stuttgart Hafen (DE)	59	Salzburg Hbf- ROLA (AT)	84	Genova VTE - Port (IT)
10	Freiburg (DE)	35	Ulm (DE)	60	St. Michael CCT (AT)	85	Intermodal terminal of Mortara (IT)
11	Gendorf (DE)	36	Wackersdorf (DE)	61	Villach Süd CCT (AT)	86	Intermodal terminal of Rovigo (IT)
12	Hafen Deggendorf (DE)	37	Wörth (DE)	62	Wels Vbf. CCT (AT)	87	Intermodal terminal of Trento (IT)
13	Höf (DE)	38	Avignon (FR)	63	Wolfurt CCT (AT)	88	La Spezia Container Terminal (IT)
14	Ingolstadt (DE)	39	Lyon Terminal SA (FR)	64	Wörgl CCT (AT)	89	Melzo (IT)
15	Karlsruhe (Contargo) (DE)	40	Lyon Terminal Venissieux (FR)	65	Aarau (CH)	90	MGDV Vercelli (IT)
16	Karlsruhe (DUSS) (DE)	41	Marseille (FR)	66	Basel Kleinhüningen (CH)	91	Milan CT-terminals (IT)
17	Kelheim Hafen (DE)	42	Marseille Port and Marseille FOS(FR)	67	Basel Swissterminal (CH)	92	Nord-Est Terminal S.P.A. (IT)
18	Kornwestheim (DE)	43	Miramas (FR)	68	Basel Wolf (CH)	93	Novara CIM (IT)
19	Landshut (DE)	44	Ottmarsheim (FR)	69	Birsfelden (CH)	94	Oleggio Terminal (IT)

20	Ludwigshafen (Contargo) (DE)	45	Strasbourg Terminal Conteneurs Nord (FR)	70	Chiasso (CH)	95	Padua Terminal (IT)	Interport
21	Ludwigshafen KTL (DE)	46	Strasbourg Terminal Conteneurs Sud (FR)	71	Frenkendorf (CH)	96	Port of Mantua – Valdaro (IT)	
22	Mannheim Container-Terminal Contargo (DE)	47	Bludenz CCT (AT)	72	Lugano (CH)	97	Port of Trieste (IT)	
23	Mannheim-Handelshafen (DE)	48	Brennersee (RoLa) (AT)	73	Niederglatt (CH)	98	Port of Venice (IT)	
24	München CDM (DE)	49	CCG Cargo Center Graz (AT)	74	Rekingen (CH)	99	S.I.T.O Interport of Torino Orbassano (IT)	
25	München-Riem (DE)	50	Enns Hafen CCT (AT)	75	Stabio (CH)	100	Verona Quadrante Europa (IT)	

Intermodal terminals in the Alpine macro-region

The aspects previously mentioned influence two main indicators of the competitiveness of intermodal terminals, i.e. operational costs and times, which can contribute in explaining the total volume of goods handled in a terminal. In the framework of the Alpine macro-region, volumes may be very different. It is thus possible to distinguish between primary and secondary intermodal centers.



CT volumes for selected intermodal terminals in the Alpine macro-region

Regional Input on Inland Terminals

Interporto di Verona	
Map	
Management Company	Consorzio ZAI
Ownership	Consorzio ZAI, is a public body set up in 1948 by the Verona Municipality, Province and Chamber of Commerce, established in accordance with Legislative Decree 24/04/1948
TEN-T Network and RFC Role	Interporto Quadrante Europa Verona is classified as RRT (Rail Road Terminal) in the TEN-T Core Network. It is located on the Scandinavian Mediterranean and Mediterranean Corridors
Rail Aspects	<p>Interporto Quadrante Europa Verona is located on the Rail node of Verona at the intersection of the following lines:</p> <ul style="list-style-type: none"> -from/to North direction Brenner-Verona railway line, Core Network rail, electrified, double track, with PC80 classification as per combined transport. -from/to West Verona-Brescia railway line, Core Network rail, electrified, double track, with PC80 classification as per combined transport.

	<p>-From to East Verona-Vicenza-Padova, Core Network rail, electrified, double track, with PC80 classification as per combined transport..</p> <p>- From/to South Verona-Bologna Core Network rail, electrified, double track, with PC80 classification as per combined transport.</p> <p>The main limit to the development of intermodal traffic in Verona RRT is the rail congestion in the Brescia-Verona-Vicenza-Padova-Venezia East-West Axis. On the second hand,</p> <p>Inoltre, l'ascesa nei pressi di Fortezza e del passo del Brennero supera il 20%, richiedendo l'utilizzo di più locomotori a seconda del carico trasportato.</p>
Operators and Companies located	<p>Interporto Quadrante Europa covers a total area of about 4,200,000 sqm, of which 2,823,600 sqm built.</p> <p>The area for covered warehouses has a width of 400,000 sqm, of which 250,000 are dedicated for dry logistics. There are warehouses for fresh food in 100,000 sqm and 50,000 sqm for frozen goods. The area dedicated to heavy vehicle parking occupies 50,000 sqm.</p> <p>There is an area dedicated to customs.</p> <p>There are currently around 130 operators, including 40 forwarders and custom forwarders, 10 couriers, 28 road haulage companies, 40 logistics operators, 6 railway companies, 3 intermodal operators.</p>
Intermodal Terminals	<p>Inside the Interporto there are three intermodal terminals. The first terminal is owned by RFI and managed by Terminali Italia, and has 10 loading and unloading tracks. The second is owned by Q.E. Terminal Gate and it is also managed by Terminali Italia, with 5 tracks. The third is owned by COConsorzio ZAI and managed by Quadrante Servizi, with 3 tracks.</p> <p>The terminal area is developed on a total surface of 265,000 square meters. Among the equipment there are 13 reach stackers and 7 gantry cranes.</p>
Tracks	<p>The intermodal terminal is equipped with 18 side-by-side tracks, of which 5 are 650 m long, 13 are 550 meters long.</p> <p>Inside the Interporto there is a railway station equipped with 20 tracks (marshalling yard) dedicated to arrival/departing all electrified, 600 meters long.</p>
Annual traffic (2016 and 2017 data)	<p>2016: 16.294 annual trains, of whom 13.452 intermodal and 2.742 conventional.</p> <p>2017: 16.329 annual trains, of whom 13.542 intermodal and 2.787 conventional</p>
Link with Secondary Network and cluster role	<p>Interporto Quadrante Europa is a meeting point for road and rail, national and international, traffic to/from central and northern Europe through the Brenner pass and to/from the Eastern European countries.</p> <p>The connections with the secondary networks are ensured by road, through the ordinary road network. The catchment area of the terminal is in fact calculated in about 150km radius, reaching the neighboring provinces of Brescia, Trento, Bolzano, Vicenza, Mantua, Modena.</p>

	<p>Among the various activities within the Interporto Quadrante Europa there are ancillary services such as handling, storage and damage management UTI, dangerous goods terminalization and there is also an Agri-Food Center of international relevance.</p> <p>The presence of a 1st level Customs District has a functional specialization in definitive and temporary import / export, re-export of fauna and flora specimens. Phyto-pathological service is also carried out in Customs</p>
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Interporto di Padova	
Management Company	Interporto Padova S.p.A.
Ownership	The owner of the Padua freight village is a structure shared among 40 public and private subjects. The Chamber of Commerce of Padua (28,56%), the municipality of Padua (19,49%), the province of Padua (15,79%) and APS Holding S.p.A. (10,65% that is the provider of local transport services) are the main shareholders. In addition, there are other several owners with few shares like the Consorzio Zona Industriale e porto Fluviale di Padova (7%), Dexia Crediop S.p.A. (4,49%) and A4 Holding S.p.A. (3,59%). On the other hand, the Interporto of Padua S.p.A. is the owner of many shares in other external societies in the sector linked to its catchment area. The most important is in the Interporto of Rovigo S.p.A. (2,75%).
TEN-T Network and RFC Role	The freight village of Padua is classified as Core RRT on the TEN-T Mediterranean and Baltic-Adriatic Corridors. In addition, is placed close to the Rail Freight Corridor 6 Mediterranean and to the Rail Freight Corridor 5 Baltic-Adriatic.
Rail Aspects	<p>The inland terminal of Padua is linked to the National railway network thanks to a dedicated railway siding coming from the Padua-Mira M. (Venice) line. This essential stretch of line has important features for the rail freight transport: double tracks electrified, the gabarit is PC80 (the Italian standard that allows semitrailers to go through the tunnels), module of 625 meters and axle load D4.</p> <p>From the Padua node is possible to reach:</p> <ul style="list-style-type: none"> - the Padua-Vicenza-Verona line on the west side that has the same features of the previous stretch (double track electrified, the gabarit is PC80, module of 625 meters and axle load D4); - the Padua-Rovigo-Ferrara-Bologna line on the south side that has

	<p>almost the same features of the previous one (double track electrified, the gabarit is PC80, module of 625 meters and axle load D4 between Bologna and Rovigo and D4L up to Padua);</p> <p>- the Padua-Castelfranco V. line on the north that has: double track electrified, the gabarit is PC80, module of 575 meters and axle load D4.</p> <p>Regarding the constraints that are avoiding the development of the railway freight transport is important to point out that the Padua-Venice line has an high level of use.</p>
Operators and Companies located	<p>The freight village of Padua is developed on a surface of about 2 millions of square meters totally built. The area for covered warehouses covered warehouses has a width of 270,000 sqm, of which 251,350 are dedicated for dry logistics. There are warehouses for fresh food in 16,000 sqm and 2,650 sqm for frozen goods. In addition, the area dedicated to heavy vehicle parking occupies 42,500 sqm.</p> <p>There is an area dedicated to customs in which there customs warehouses with an area of 1,000 sqm.</p> <p>Currently, there are around 107 operators, including 21 forwarders and custom forwarders, 29 couriers, 15 road haulage companies, 30 logistics operators, 3 intermodal operators and other 9 producer companies.</p>
Intermodal Terminals	<p>Inside the freight village there are two intermodal terminals. Interporto of Padua manages directly both terminals that are: the Big New Terminal which property is of the Padua Freight Village itself and the other one is the Terminal of FS Logistics (the management of the latter is given thanks to a lease agreement signed with the FS Italian Group). The terminal area is developed on a total surface of 350,000 square meters. Among the equipment, there are 14 reach stackers. In 2017, it was developed a huge project regarding the upgrade of the Big New Terminal featured by a new automated gate and 4 RM Gantry Cranes. This new devices started their activity on march 2018.</p>
Tracks	<p>The intermodal terminal is equipped with 7 tracks for handling operations 440 meters-long, 8 tracks 750 meters-long and further 2 tracks 700 meters-long able to handle trains 690 meters-long. The connection with the national railway network is allowed thanks to a railway siding that reaches the Padua railway freight station. This station is owned by RFI (the railway infrastructure manager) and it covers an area of 83,000 sqm. The station is equipped with 21 tracks (marshalling yard) dedicated to arrival/departing and sorting.</p>

Annual traffic 2016	5,150 trains in 2016. The rail freight traffic is mainly maritime-intermodal that has reached 2,343 train pairs in 2016 while the conventional traffic was 232 train pairs.
Link with Secondary Network and cluster role	<p>The Padua freight village is placed at the intersection of the Baltic-Adriatic and Mediterranean TEN-T Corridors as well as at the intersection of the A13 Bologna-Padua and A4 Brescia-Verona-Padua motorways.</p> <p>There are many services that the freight village of Padua offers to its customers (especially to the operators that operate in the area): loading, unloading and storage of maritime and land loading units; depot and handling of container and other intermodal loading units, management of the intermodal terminals that have daily connections with the main Italian and foreign ports, building of special and modified containers, PTI, washing and management of reefer containers, fumigation, storage of refrigerated products at set temperature, innovative technologies and software to carry out weighing operation necessary for containers before their loading on the vessels.</p>

Interporto di Novara

Map	
Management Company	CIM SpA - Centro Interportuale Merci of Novara
Ownership	The company's shares are mainly owned by public companies (63,39%) with the majority shareholder represented by Piedmont Region (Finpiemonte SpA) which share is 30.06 %. The other shareholders are: the Turin-Alessandria-Piacenza Motorway company (24.31%), the Municipality of Novara (16.88%), S.I.T.O. Interporto Society SpA (13.8%), Banco BPM (4.41%), Hupac (3.64%), Intesa San Paolo Bank (2.25%), Mercitalia Logistics (1.53%), industrial Association of Novara (0.06%) and PLC Srl (0.11%).
TEN-T Network and RFC Role	The CIM Novara freight Village is classified as Rail-Road Terminal inserted in the TEN-T Core Network and at the intersection of the Rhine-Alps and Mediterranean corridors. In addition, the inland terminal is placed both on the Rail Freight Corridor 1 Rhine-Alpine and on the RFC Mediterranean.
Rail Aspects	The Novara node is at the intersection of several railway lines so it possible to reach:

	<p>-from the north side, the Oleggio-Vignale-Novara line. It is fully electrified with: single track, gabarit PC 50, module 510 meters-long;</p> <p>-from the east to west direction, the Settimo Torinese-Vercelli-Novara-Rho line. It is a main line with: double track, gabarit PC80, module 575 meters-long and axle load D4;</p> <p>-from the south side, the Alessandria-Torreberetti-Mortara-Novara line. It is fully electrified with: double track, gabarit PC 45, module 525 meters-long and axle load D4L;</p> <p>-from the north side, the Borgomanero-Vignale-Novara line. It is fully electrified with: single track, gabarit PC 80, module 575 meters-long and axle load D4L.</p> <p>In addition, on the north side it is possible to access to the Varallo-Sesia-Vignale-Novara line. It is not electrified with: single track, gabarit PC 22, module 230 meters-long and axle load D4L.</p> <p>The main issues that are avoiding the development of railway freight traffics on the south side (especially to Liguria) are: the gabarit (PC 22 to Genova and PC 32 to Savona), the slope (more than 13% and in some stretches to Genova more than 20%) and the axle load (C3 to Savona).</p> <p>On the North side, the problems regard the capacity of the line, with a constraint on the number of tracks to reach the lines to Vignale.</p> <p>In addition, on the east side there many congestions on the Milan node.</p>
Operators and Companies located	<p>The freight village of Novara CIM is developed on a surface of about 845,000 square meters of which 785,000 built.</p> <p>The area for covered warehouses covered warehouses has a width of 66,500 sqm, of which 66,000 are dedicated for dry logistics while 500 sqm are occupied by controlled temperature warehouses. There are 2.000 sqm of offices within warehouses area and an office building of 2.000 sqm.</p> <p>There is an area dedicated to customs in which there customs warehouses with an area of 4,000 sqm.</p> <p>Currently, there are around 45 operators, including 1 forwarder, 3 road haulage companies, 4 logistics operators, 8 intermodal operators and other 2 producer companies.</p> <p>The area dedicated to heavy vehicle parking occupies 11,000 sqm.</p>
Intermodal Terminals	<p>Inside the Interporto of Novara there are 4 intermodal terminals. The first terminal (CIM), 150,000 sqm, is owned by CIM and managed by a subsidiary. The second, Terminal Boschetto is 135,000 sqm area. The third Nuovo Terminal Boschetto is developed on 25,000 sqm, while</p>

	<p>the fourth, Met. Extra is 6,000 sqm Among the equipment there are 12 reach stackers.</p>
Tracks	The intermodal terminal CIM is equipped with 7 tracks, 600 m long, the Terminal Boschetto 5 tracks 500 m. long, Nuovo Terminal Boschetto 2 tracks 600 m. long. the Terminal Met. Extra 1 track 400 m. long
Annual traffic	2016: 7.127 annual trains.
Link with Secondary Network and cluster role	<p>Novara is a terminal hub for the North West of Italy, since trains from Lotschberg and Gotthard axis arrives in the Terminal. Then freight can be distributed in Piedmont and Lombardy regions.</p> <p>As support activities in Novara CIM are offered the management of dangerous goods, for the assessment of environmental impact, the repair of wagons and UTIs, customs services, locomotor repair services.</p> <p>In April 2016 a memorandum of understanding was signed between the Piedmont Region, CIM, SITO and Rivalta Terminal Europa for the promotion and development of Piedmont RRTs within the logistics system of the North-West in order to take advantage of the opportunities arising from the development infrastructures and trade on the great trans-European axes to support the industrial and port systems of the macro area.</p>

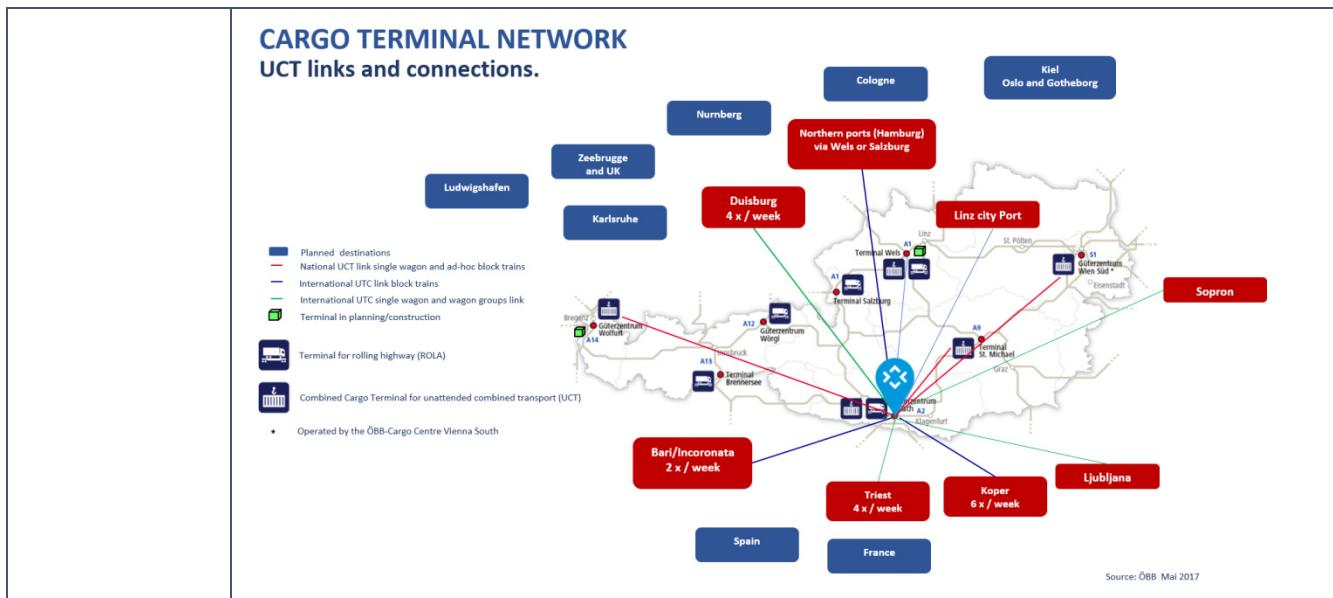
Carinthia

Interporto Villach Süd, Logistik Center Austria Süd

Map	 
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Management Company	ÖBB-Infrastruktur AG
Ownership	ÖBB-Infrastruktur AG
Access	<p>(a) From border crossing at Arnoldstein (I) – For runs in the context of combined traffic exemption from the ban on night-time driving → A2 motorway (A2 Südautobahn) → Exit 'Villach-Warmbad' (EXIT 353) → B83 'Kärntner Bundesstraße'</p> <p>(b) From border crossing at Rosenbach (SLO) – For runs in the context of combined traffic exemption from the ban on night-time driving → A11 motorway (A11 Karawankenautobahn) → A2 motorway (A2 Südautobahn) → Exit 'Villach-Warmbad' (EXIT 353) → B83 'Kärntner Bundesstraße'</p>
Rail Aspects	<p>(a) Catchment area Situated in the central south of Carinthia; close to the Austrian-Slovenian and Austrian-Italian border.</p> <p>(b) Hub Function Pre-carriage: Germany, Italy, Austria, Slovenia; Destination: Germany, Italy, Austria, Slovenia</p> <p>(c) Gateway Function Origin: Treatment of traffic flows to Italy; Destination: Treatment of traffic flows to Italy</p> <p>Total length of railway sliding 4 000 m Maximum train length 600 m Loading tracks 6</p> <p>Container storage yard 25 000 m² / 1 000 TEU Empty container / Depot</p> <p>Shunting Yard:</p> <ul style="list-style-type: none"> ▪ 11 In-tracks, 40 shunting tracks

	<ul style="list-style-type: none"> ▪ 100 km tracks incl. approach tracks ▪ 320 signals ▪ 250 switches ▪ 33.000 brake elements (Dowty Retarder) ▪ Efficient systems for disposition and processing ▪ Number of ÖBB-employees ca. 260 (shift work) 	<p>Daily capacity: ca. 3.200 wagons within 22 hours of operational time</p> <p>Workload now (on an average working day):</p> <ul style="list-style-type: none"> ▪ Trains in 95 (with 91.000 tons – 38 km length of 2050 wagons) ▪ Disassembling on the main hill 90 ▪ Trains out 80 ▪ International: 20 ▪ National: 12 <p><small>Load distribution: 12 with 50 train building</small></p>
Operators and Companies located	<p>The Terminal Villach Süd/ LCA-Süd covers a total area of about 70.000 sqm.</p> <p>List of provided services: Agency service, customs service, cooling and heating service, container repairing, container cleaning, depot, accredited destination point for checking of packing wood</p> <p>During opening hours</p>	
Intermodal Terminal	<p>As a neutral terminal operator ÖBB-Infrastruktur AG guarantees an optimal organisation of Intermodal Transport Units (ITU) and a perfect coordination between customers, operators and the railway companies. This ensures a smooth, process-oriented transport management at the INFRA terminals located at the most important economic hubs in Austria.</p>	
Tracks	<p>Quantity and length of tracks - 4 x 350</p> <p>Maximum length of train 1 x 300 m, 1 x 350 m (ROLA)</p> <p>Max. length of train: 600 m</p> <p>Loading /unloading equipment (cranes, ramps, stackers...)</p> <ul style="list-style-type: none"> ▪ 1 portal frame / max. 38 t ▪ 2 container carrier truck / max. 45 t <p>2 stacker for empty container / max. 10 t</p>	
Link with Secondary Network and cluster role	<p>LCA-Süd and Terminal Villach Süd is a meeting point for road and rail, national and international, traffic to/from central and northern Europe through the tauern axis and to/from the Eastern European countries along the baltic-adriatic axis.</p> <p>With the current (Spring/Summer 2018) Project of the implementation of a customs corridor between LCA-Süd and the port of Trieste, LCA-Süd / Terminal Villach Süd is establishing itself as dry-port with close collaboration with the port of Trieste.</p>	



Styria

Large-scale extension and upgrading works of Cargo Centre Graz (CCG) have started recently. These measures will also improve the service quality of this inland terminal, to better connect regional enterprises with the TEN-T core network and to enhance their competitiveness.

Trentino

The autonomous Province of Trento, in application of Provincial Law no. 16 of 9 July 1993 and acting under authority obtained from the European Union, put in place a system of incentives for the concession of grants in aid of a combined rail-road freight system. This is incorporated within a strategy of empowering the shift from road to rail and includes the redevelopment of the Roncalfort Terminal north of Trento. In the next three years, three million Euro will be made available for the purpose. Among wide-reaching objectives, the decongestion of the Trentino section of the motorway system stands out, as the A22 carries the heaviest traffic load in the Alpine range. A notable proportion of this traffic is deviated from elsewhere and is a direct consequence of more favourable toll charges than those practised at other Alpine passes and of other factors which make this highway more commercially appealing.