Suivi de Zurich – Working Group

Heavy Goods Traffic Management Systems in the Alpine Area

Review on Combined Transport in Alpine countries

Update May 2016
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Introduction

Preface

In the context of the declaration of Zurich, the ministerial conference of May 2nd 2012 entrusted the working group of traffic management systems to carry out a review of the different offers of Combined/multimodal/rail transport services aiming at enhancing the transparency for consigners and transporters about existing and planned services by rail, in particular using Combined Transport. This should lead to an increase in demand for rail services and thus contribute to one of the overall aims of the Suivi de Zurich, i.e. the modal shift from road to rail.

This review of Combined/multimodal/rail transport is designed to give an overview of the existing services, the projects already under construction or planned, the specific framework conditions and the remaining weak points which should be tried to eliminate or to find solutions to overcome them. The review presents the status quo in May 2014 and serves for information purposes only. Please note, that no responsibility is taken for the correctness and/or exhaustiveness of the data and information contained and that no legal, economic or political claim shall be derived from it.

Function and significance of Combined Transport in the context of transalpine transport operations

The centrally located Alps have always been an important issue regarding European transport. Since Europe has consolidated as a single economic area, the transit routes through the Alps have gained in importance. Over the years, as a consequence of continued growth transalpine transport, significant transport-related problems have been noticed, such as ecological damage, safety risks and noise. Congestion is also a current problem. However, when addressing transport volumes, the impact of the economic crisis of the last years should not be overlooked.

In the Alpine region a balanced development of the different means of transport is required, taking into account the distinctive features of this region, in particular the delicate balance between economy, society, people and their natural environment. As improvements in transport in the Alpine area
contribute directly to a sustainable development, efforts must be made to encourage the use of more economically efficient and environmentally-friendly means of transport, i.e. mainly rail transport. High-quality rail transport undoubtedly offers advantages for freight transport across large distances and through mountainous territory.

During the last decades the most innovative and therefore strongly increasing segment of rail transport has been the so called Combined Transport (CT). This mode of transport unifies the respective advantages of road and rail transport, using the area-wide flexibility of the trucks, bundling the good flows at terminals and ship them by economically and environmentally favourable block trains over longer distances.

The statistical figures of UIRR\(^1\), which is the most important association of Combined Transport operators in Europe, are quite impressive. Currently, the UIRR member companies are transporting about 3 million shipments (equivalent to trucks with trailer or semitrailer) per year, a value which grew by 53.5 % during the last 10 years despite the financial and economic crises Europe faced since 2008. CT is by the fastest growing segment in European rail transport.

As the further promotion of CT is one of the most successful and promising approaches in order to contribute to a sustainable handling of transalpine traffic flows and the protection of the environment, a special focus has to be on this issue. Important strengths of Combined Transport are the bundling of transports, the need for less infrastructure areas, the possibility to use the existing rail infrastructure more efficiently and to disburden road infrastructure.

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\(^1\) French abbreviation for "International Union for Road-Rail Combined Transport"
1. Measures for the promotion of Combined Transport

1.1 Measures for the promotion of Combined Transport in general and Alpine crossing CT in particular

Note: General information on measures for the promotion of Combined Transport is also available on the ECE website:

The promotion of intermodality and the intensified use of Combined Transport are of utmost importance for the establishment of competitive alternatives to road transport. Therefore Austria has been introducing early measures for the support of environment friendly modes, such as rail or Combined Transport.

The following measures aim at promoting Combined Transport:

(1) Financial support for investment and for operation

- **Innovation programme for Combined Freight transport**

  In the framework of the *Innovation Programme for Combined Freight Transport* (2015-2020), financial support (up to 30 % of eligible investment costs) for the implementation of innovative technologies and for Combined Transport equipment (for instance containers, swap bodies, semi-trailers specifically adopted for combined transport etc.) is offered.

  Systems for the improvement of combined transport services, feasibility studies for implementation measures and costs for training in specific EDP-systems or techniques are financially supported as well. The budget is approximately € 3 million Euros per year.

- **Programme for the Support of Sidings and Intermodal Terminals (Road/Rail/Ship)**

  Austria also provides financial support for investments in terminals, regarding construction, enlargement and modernization of transshipment points.

  The *Programme for the Support of Sidings and Terminals* ("Anschlussbahn- und Terminalförderung") of the Austrian Federal Ministry for Transport, Innovation and Technology (bmvit) allows funding for sidings and intermodal terminals in Austria. This programme, which runs from 1 January 2013 to 31 December 2017, provides public co-funding for investments in installations and constructions which are exclusively used for the transhipment of goods. These transhipment facilities between road, rail and/or inland waterways (which must be located in Austria), may be promoted up to 50 % of eligible costs, provided that the premises remain operative for a minimum duration of 11 years at least.

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Financial support for operation

Financial support for Combined Transport by rail is based on contracts between the bmvi and railway undertakings and is granted for each consignment transported in Austria. In unaccompanied Combined Transport, the extent of this support differentiates between national, bilateral and transit transport and moreover depends on the size/length and weight of the intermodal transport unit, as well as on the transport distance covered on the Austrian railway network. In accompanied Combined Transport, the refund varies according to the axis on which the consignments are transported and partly on transport time (day/night).

Programme for the Development of Intermodal Transports and for the Promotion of Combined Transport Projects on the Danube

Another substantial measure for the financial promotion of intermodal transport along the Danube is the Programme for the development of intermodal transports and for the promotion of Combined Transport projects on the Danube (2007-2013).

Projects eligible for aid are the organisation and development of innovative regular combined transport services for containers, swap bodies and semi-trailers along the Danube as well as studies and concepts preparing innovative regular Combined Transport services.

(2) Fiscal incentives

Reduction or exemption from motor vehicle tax

If motor vehicles and their trailers exceeding 3.5 tonnes are used exclusively for Combined Transport within a calendar month, they are exempted from motor vehicle tax for that month. Alternatively, 15% of the monthly motor vehicle tax can be reimbursed for every journey effected by unaccompanied Combined Transport or Rolling Roads.

(3) Regulatory support measures

Payload adjustment

The Austrian Motor Vehicle Act defines the sum of the total weight and the sum of the axle weight of motor vehicles and their trailers as follows:
- transport of goods by road in general: 40 tonnes
- initial and final road hauls in Combined Transport to/from the nearest technically suitable terminal in Austria: 44 tonnes
- **Liberalised initial and final road leg in Combined Transport**

  For motor vehicles registered within the European Union or the European Economic Area and holding a community licence, the initial and final road leg of international Combined Transport is liberalised.

- **Liberalised corridors for Rolling Roads**

  A decree of the Austrian Federal Ministry for Transport, Innovation and Technology (bmvit) liberalises specific road corridors for the initial and final legs of Rolling Road connections between specified Rolling Road terminals and nearby border stations (i.e. no bilateral road permit for goods transport is necessary on these corridors, provided that the journey is an initial or final road leg of Rolling Road connections).

- **Liberalised Area for Rolling Roads**

  According to a decree of the bmvit, no permit for road transport is required for loading and unloading within a radius of 70 km around the terminal of Wels if Rolling Roads are used.

- **Exemption from the Weekend and Holiday Driving Ban on Lorries**

  According to the Austrian Road Traffic Regulations, journeys with motor vehicles and trailers exceeding 3.5 t as well as motor vehicles and tractors exceeding 7.5 t are prohibited on Saturdays (between 3 p.m. and 12 p.m.), Sundays and Holidays (until 10 p.m.). Journeys which are carried out in the context of Combined Transport only and do not exceed a radius of 65 km to or from specific terminals are exempted from that weekend and holiday driving ban.

- **Exemption from the Summer Holidays Driving Ban on lorries**

  On every Saturday from July until August and on some specific days, journeys with motor vehicles and trailers exceeding 7.5 t are prohibited from 8 or 9 a.m. to 3 p.m. on certain roads. Journeys which are carried out in the context of Combined Transport from and to the nearest suitable rail loading station are exempted from that ban.

- **Exemption from the Night Driving Ban**

  Motor vehicles exceeding 7.5 t which do not comply with the noise emissions standards for the so called "low noise vehicles" are not allowed to circulate from 10 p.m. to 5 a.m. Journeys which are carried out in the context of Combined Transport from and to specific rail loading
stations on clearly specified road corridors are exempted from that ban in both directions.

- **Supplementary permits for using Rolling Roads**

  Bilateral agreements on road goods transport sometimes state that supplementary permits for road goods transport will be issued if specific rolling roads in, to or from Austria are used.

- **Rest periods on Rolling Roads**

  According to the Austrian labour legislation and EU-law, the time a lorry driver spends on a Rolling Road train will be regarded as rest period.

For more detailed information of the measures listed above, including specific contacts for the various programmes, please refer to the detailed website of the Austrian Ministry for Transport, Innovation and Technology (bmvit) in German language:

- [http://www.bmvit.gv.at/verkehr/gesamtverkehr/kombiverkehr/foerderung.html](http://www.bmvit.gv.at/verkehr/gesamtverkehr/kombiverkehr/foerderung.html)

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### France

A call for expression of interest concerning state aid for the operation of regular Combined Transport services was launched at the end of 2013 in order to identify Combined Transport operators wishing to obtain such an aid. This call came to end on February 3\(^{rd}\) 2014.

French Government has submitted to the European Commission for approval an aid scheme for the period 2013-2017. It is intended to pay, under certain conditions, an aid per intermodal transport unit (ITU) transhipped, in a land terminal or port situated on metropolitan French territory.

The objective is to enable Combined Transport operators to establish a competitive offer, in order to develop this transport mode.

For further information:


Moreover, the French Government subsidises the *Autoroute Ferroviaire Alpine* (Rolling Road) between *Aiton* and *Orbassano*. 
Germany

As one of the essential objectives of its transport policy, the Federal Republic of Germany aims at increasing the share of rail and waterway transport – particularly environmentally friendly modes of transport – in the overall growth of goods transport volume. This is to be achieved within the framework of an integrated overall transport system. Combined Transport is of great importance in this connection because it brings about a considerable shift of traffic from roads to railways and inland waterways, wherever it is possible.

(1) Financial measures

The Federal Government promotes Combined Transport by providing subsidies for the construction of new high capacity intermodal terminals and upgrading existing terminals (rail/road or inland waterways/rail/road). These subsidies are provided either under the Federal Railway Infrastructure Upgrading Act, if the facilities are terminals owned by DB Netz AG, or on the basis of the Guideline to Promote Combined Transport Transhipment Facilities. The guideline has been reviewed five times and was submitted to the European Commission for review to ensure that it complies with state aid rules. The new Guideline on Funding for Combined Transport Terminals of Private Operators entered into force in January 2012.

These guidelines continue the provision of financial assistance to intermodal terminals, providing grants for the construction, enlargement and upgrading of private sector Combined Transport terminals. The guidelines have been expanded by the addition of funding for rail-to-rail and waterway-to-waterway operations. This is designed to tap into additional volumes of freight for Combined Transport in the future. The provision of financial assistance to Combined Transport does not favour a specific technology and is designed to become more efficient and represent better value for money. For this reason, new value-for-money criteria have been integrated into the guidelines in support of this objective. The level of the grants is 80 percent maximum.

(2) Fiscal measures

According to Section 3 no. 9 of the Law in Motor Vehicle Tax vehicles that are exclusively used for initial and terminal haulage are exempted from motor vehicle tax. The motor vehicle tax for vehicles used in piggyback transport can be refunded.
(3) Regulatory support measures

- **Payload adjustment**
  
  According to the 53rd Decree to the German Road Traffic Regulations Ordinance the maximum permissible weight has been increased to 44 tonnes for initial and terminal road haulage.

- **Exemption from the weekend and holiday driving ban on lorries**
  
  According to section 30 § 3 of the German Motor Vehicle Act lorries with a maximum permissible weight of more than 7.5 tonnes as well as trailers towed by lorries must not be operated between midnight and 10 p.m. on Sundays and public holidays.

  This ban does not apply to:
  - combined rail/road goods transport from the consignor to the nearest suitable loading station or from the nearest suitable station of unloading to the consignee, but only if the distance does not exceed 200 km and
  - combined port/road goods transport between the point of loading or unloading and a port located within a maximum radius of 150 km (delivery or dispatch)

- **Rest periods on Rolling Roads**
  
  In the case of the Rolling Road, the time spent by drivers on the train is counted against their daily rest periods.

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**Italy**

(1) Financial measures

- **Alpine Rolling Road Aiton-Orbassano**
  
  - Experimental service (financial intervention only until 30.6.2013 upon authorization of European Commission, intervention to the charge of the Italian and the French governments in the amount of 4.8 million Euros a head)
A new transitional period has been established from 1 July 2013 to 30 June 2018 after the conclusion of the notification state aids in line with TFUE.

A Decision from European Commission – DG Comp. has been made on 26 May 2015.

Terms of intervention applied in Italy in compliance with the agreement between Ministry of Infrastructure and Transport and Trenitalia

A tender is foreseen for a prorogation of the state aids from 1 July 2018 to 31 December 2027.

In any case prosecution of the service is subject to ratification of international agreement with France, as well as to the effective allocation of the necessary resources.

**Ecobonus – Motorways of the Sea**

Italy, until 2010, with the approval of the EU, provided funding for the promotion of intermodality by supporting the *Motorways of the sea*. For this purpose, it was envisaged to award financial incentives ("eco-bonus") for the road transport companies who availed of the maritime mode instead of the road, ensuring a minimum number of trips and pledging to confirm them in a second three-year period.

The measure was intended to shift shares of freight traffic from road to sea and to affirm a more mature logistic mentality. The intervention was also provided for intra-community routes, with a commensurate amount of the corresponding road route to the national border.

The sea routes encouraged allowed avoiding the passage of heavy vehicles in the Alpine routes for the execution of international transport. These incentives have helped to consolidate the activities of maritime operators on certain routes and facilitated the change of mentality of road hauliers who continued to use the ships to carry out international transport from Italy to Spain and v.v.

Navigation services, already included in the Community sections of "Motorways of the sea" that continue to be active even after the termination of the financial incentives are as follows:

- **Rete Autostrade Mediterranee:**
  
  [http://www.ramspa.it/](http://www.ramspa.it/)
Grimaldi Group Naples:

<table>
<thead>
<tr>
<th>Route</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>from Livorno to Barcelona/Valencia v.v.:</td>
<td>4 departures per week, ships with a capacity of 270 trailers + 250 cars</td>
</tr>
<tr>
<td>from Livorno to Barcelona v.v.:</td>
<td>1 departure per week, ships with a capacity of 120 trailers +100 cars + 1000 PAX</td>
</tr>
<tr>
<td>from Civitavecchia to Barcelona v.v.:</td>
<td>6 departures per week, ships with a capacity of 180 trailers + 215 cars + 2000 PAX</td>
</tr>
<tr>
<td>from Salerno to Valencia v.v.:</td>
<td>3 departures per week, ships with a capacity of 270 trailers + 250 cars</td>
</tr>
</tbody>
</table>

GNV:

<table>
<thead>
<tr>
<th>Route</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>from Genova to Barcelona:</td>
<td>3 departures per week</td>
</tr>
</tbody>
</table>

In any case other financial measures to support intermodal transport have been provided by the Stability Law of 2016 and in particular:

- **“Marebonus”**
  According to the 2016 Stability Law granting of contributions has authorized to the implementation of projects to improve the intermodal chain and to decongest the road network, for setting up, launching and implementation of new shipping services to transport combined goods or improvement of services on existing routes, arriving and departing from ports in Italy, connecting ports situated in Italy or in the EU Member States or the European Economic Area. To this end, the authorized annual expenditure is of 45.4 million euro for the year 2016, of 44.1 million Euros for the year 2017 and 48.9 million euro for the year 2018.

- **“Ferrobonus”**
  In addition, for the full development of the intermodal transport system, it is also authorized the granting of contributions for intermodal rail services arriving at and departing from logistics and port nodes in Italy. To this end, the provided annual expenditure is of € 20 million for each of the years 2016, 2017 and 2018.

A regulation shall be laid down to detail the rules for the implementation of the measures "Marebonus" and "Ferrobonus", to be subject to prior notification to the European Commission, pursuant to Article 108 of the Treaty on European Union.
(2) Legal measures

- **Exemptions and relaxation from driving bans**
  - Calendar of traffic bans out of inhabited areas for the year 2016 (holidays and other particular days).
  - Vehicles and coupled combination of vehicles with mass > 7.5 t (Ministerial Decree 22.12.2015).
  - For vehicles that are directed to the interports of national importance or placed in a strategic position for the purposes of connections across the Alps used in Combined Transport road-rail equipped with documents relating journey destination and with booking or ticket for loading in compliance with Directive 1992/106 and Ministerial Decree 15.2.2001, time of ban end is 4 hours beforehand.
  - A derogation from the aforesaid bans is also provided in the case of combined transport referred to in Directive 92/106 provided that the initial or final road leg do not exceed 150 km.

- **Bilateral agreements on road goods transport with non-EU countries**
  - Some bilateral Italian agreements on road goods transport with non-EU countries (Kazakhstan, Russia, Belarus, Serbia and Ukraine) establish dedicated quotas providing for the compulsory use of the railway services (Rolling Road) to enter and exit Italian territory.
  - With Turkey has also agreed a quota of permits allocated to the Turks vehicles disembarked in Italy and transported by rail in Italian territory and there is also the granting of "bonus" permits for road transport in the event of ship-rail transport.

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**Slovenia**

All measures adopted by the Government of the Republic of Slovenia are included within the Decree on CT (Official Gazette of the Republic of Slovenia 2/2001) in articles 5, 6 and 7.
**Total permissible weight of vehicles in pre-carriage and on-carriage**

The total permissible weight shall be up to 44 tonnes for the following road vehicles performing pre-carriage and on-carriage along the distance defined in **Article 3**:

- a towing vehicle with three axles accompanied by an articulated semi-trailer with two or three axles if it is transporting an ISO container of 40 feet (12.2 m) in length and the articulated semi-trailer is strengthened for transport in unaccompanied Combined Transport
- a group of vehicles with five or more axles, if the group of vehicles is adapted for the transport of swap bodies

**Exemption from road fees for foreign vehicles**

Exemptions from road fees for foreign vehicles using roads in the Republic of Slovenia for Combined Transport are laid out in the **Decree on Road Fees for Foreign Vehicles Using Roads in the Republic of Slovenia (Ur. l. RS, 29/93, 16/95 and 28/95)**, unless otherwise stipulated by a bilateral agreement between the Republic of Slovenia and the country in which the road freight vehicle or tractive unit has been registered.

**Exceptions to traffic restrictions for freight vehicles**

The traffic restrictions from **Articles 2 and 3 of the Order on Traffic Restrictions on Roads in the Republic of Slovenia (Ur. l. RS, 38/99 and 100/99)** shall not apply to freight vehicles or groups of vehicles whose maximum permissible weight exceeds 7500 kg and which are engaged in road transport combined with transport by rail or ship:

- to a terminal, reloading station or RoRo port, if they continue their journey using a piggy-back train or a ferry and would otherwise not reach their destination on time. The driver shall provide evidence of this by means of the documentation defined in **Article 8** of this Decree.
- from a terminal, reloading station or RoRo port to the nearest border crossing, if they arrived using piggy-back transport or a ferry and if they are able to proceed with their journey to their destination abroad. The driver shall provide evidence of this by means of the documentation defined in **Article 8** of this Decree.
Switzerland

A short overview:

- Modal shift policy anchored in the Federal Constitution
- Goods Traffic Transfer Act defines a clear target for trans-Alpine freight transport
- Funding for operational payments in trans-Alpine Combined Transport (2014 budget: CHF 164.5 million Euros; current payment framework until 2018; extension by 5 years planned)
- Funding for terminal investments to increase handling capacities domestically and abroad
- Construction of the New Rail Link through the Alps (NRLA): Base tunnels at Lötschberg (in operation since June 2007) and Gotthard (scheduled to go into operation at the end of 2016)
- Construction and financing of a 4-metre corridor (for P400) on the Gotthard axis (planned for 2020)
- Sunday and night driving ban on the road
- Performance related heavy vehicle fee (LSVA):
- Exemption from LSVA leading up to and following Combined Transport:
- ETCS will be implemented throughout the Swiss railway network
- Liberalised market: intense competition between railway operators and Combined Transport operators on the north-south axis
- Swiss Ministry is Member of Executive Board Rail freight corridor 1 and 2

Some more details about the status of ongoing political activities relating to rail freight transport in Switzerland:

- Bidding procedure for transalpine UCT for 2014

  According to the projections for 2014, a total of 164.5 million CHF has been set aside for the subsidies for transalpine Combined Transport (CT). This is 10 million CHF less than in the current year. Further reductions are planned in the years to come. This money will be used to subsidise the uncovered costs incurred by CT operators for the transalpine UCT services they provide and for the Rolling Road through Switzerland. Under the terms of Article 8 of the Goods Transfer Traffic...
Act (GTTA), the average subsidy amount for each consignment must fall from year to year.

- **Construction and financing of a 4-metre corridor on the Gotthard axis**

  By the end of 2013, the Swiss Parliament decided that the profile on the approach routes to the Gotthard tunnel should be increased. This makes it possible to transport semi-trailers with a corner height of 4 metres by rail using standard rolling stock from Basel to Chiasso or Luino. This 4-metre corridor should come into operation in 2020. Italy and Switzerland have confirmed their joint intention of increasing the clearance on this route in a memorandum of understanding. A 4-metre corridor through to Novara is already in place on the Lötschberg-Simplon Axis. However, the capacity of these train paths is almost fully utilised.

- **Introduction of emission limits for goods wagons in Switzerland from 2020**

  In 2013, the Swiss Parliament, voted in favour of a bill which gives the Government the authority to declare that the emission limits for renewed or upgraded freight wagons under the terms of TSI Noise (Commission Decision 2011/229/EC of 4 April 2011) are mandatory in Switzerland. In practice, this involves a ban on cast iron brake shoes from 2020.

  In 2003 Switzerland also introduced a noise-based train path pricing system. In addition, the UIC (International Union of Railways) homologated LL brake shoes in the early summer of 2013. Therefore, Switzerland recommends that wagon owners begin to plan immediately to upgrade those vehicles which will travel through or in Switzerland. It also makes financial sense to use low-noise vehicles on the Rotterdam-Genoa Corridor in order to gain maximum benefit from the reduced train path prices.
**Modal shift report 2015**

An overview relating the state of play concerning modal shift policy in Switzerland 2015 is represented in the Modal shift report 2015 and can be downloaded on the general FOT-Internet page about modal shift policy: [see "Verlagerungsbericht 2015"](http://www.bav.admin.ch/verlagerung/index.html?lang=de)

**Promotion of innovative measures for freight transport in the framework of the revised legal Act on freight transport (Gütertransportgesetz):**

Based on a study about the potential of innovative measures in the freight transport sector (rail, intermodal), the revised federal law on rail freight transport (it will be in force probably up from 1st July 2016) is taking into account certain categories of measures which could be subsidised with a view of an increased sustainable transport system in general (independently of the sensitive alpine area). The following measures could be part of it:

1. innovations of the transport system which present completely new systemic solutions for the transport chain and covering several sectors such as rolling stock, infrastructure and operational services offered;
2. innovations related to the rolling stock which include improvements of the rolling stock and its components;
3. innovations related to the infrastructure leading to improvements of the fix infrastructure or its components,
4. innovations related to processes which optimise the proceedings at the existing railway system at existing technology

For each category, examples of detailed measures with a high degree of market- and industry readiness are defined:

For instance in category 1:

- radio based multiple unit control for double traction in shuttle services;
- optimization of freight rail traction in a highly occupied rail network of mixed traffics;

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3 Report in German: [http://www.bav.admin.ch/verlagerung/index.html?lang=de&download=NHzLpZeq7tLnp6iONTU042i2Zhi1acv4Zn4Z2qZpnO2Yqz26gpJCDfIB.fnym16ZepYbg2c_JjKbNoKSn6A=](http://www.bav.admin.ch/verlagerung/index.html?lang=de&download=NHzLpZeq7tLnp6iONTU042i2Zhi1acv4Zn4Z2qZpnO2Yqz26gpJCDfIB.fnym16ZepYbg2c_JjKbNoKSn6A=)


Report in Italian: [http://www.bav.admin.ch/verlagerung/index.html?lang=it&download=NHzLpZeq7tLnp6iONTU042i2Zhi1ah2ozZv4Z2qZpnO2YupZ26gpJCDfIB.fnym16ZepYbg2c_JjKbNoKSn6A=](http://www.bav.admin.ch/verlagerung/index.html?lang=it&download=NHzLpZeq7tLnp6iONTU042i2Zhi1ah2ozZv4Z2qZpnO2YupZ26gpJCDfIB.fnym16ZepYbg2c_JjKbNoKSn6A=)

- automatic braking test for entire trains requesting intra train communication and energy supply on every waggon;
- Hybrid or bi-system traction locomotives;
- Modalohr rolling stock, Cargobeamer for non cranable units;

**in category 2:**
- telematics of rail waggons for tracking and tracing;
- automatic center buffer couplers for rail waggons;
- retrofitting with low noise composite breaks (K-Sohle, LL-Sohle)

**in category 3:**
- optimization of tunnel gauge, rolling stock and loading units;
- increase of axle weight according to TSI on certain categories of TEN routes;

**in category 4:**
- harmonization of operating rules and regulations in international and multisystem rail transport (including operation language, signalling systems);
- train coupling and sharing (to and from blocktrains) for increased network capacity.
2. Infrastructure

2.1. Limits regarding train length, loading gauge and train weight on different Ax

Picture: Kombiverkehr
Austria

Broadly speaking, information regarding train length and loading gauge is comparatively easy to obtain and explain on a general level. The maximum possible train weight, however, depends on different parameters, e.g.:

- direction for crossing the Alps (downhill/uphill gradients)
- maximum possible speed
- terminal infrastructure

The most difficult aspect is the fact that maximum train weight varies several times on a given crossing, depending on the relevant track section. For instance, one simple answer for the Tauern-axis can hence not be provided, but rather 4, 5 or more different ones. This is why we have decided to indicate maximum axle loads instead of maximum train weights.

The limits regarding loading gauge\(^5\) and train length\(^6\) on the three principle alpine crossing railway lines can be summarized as follows:

| Ax Brenner: Brenner - Kufstein | Line category: D4 = max. axle load: 22,5 t and 8 t/m  
|                                | Loading gauge: P/C 70, C400  
|                                | Terminal Brennersee: max. train length 420 m  
|                                | Terminal Hall in Tirol: max. train length 600 m  
|                                | Terminal Wörgl: max. train length 500 m  
|                                | Terminal Wolfurt: max. train length 550 m  
| Ax Tauern: Salzburg – Thörl, Rosenbach | Line category: D4 = max. axle load: 22,5 t and 8 t/m\(^7\)  
|                                | Loading gauge: P/C 70, C400  
|                                | Terminal Salzburg: max. train length 620 m, 420 m for RoLa  
|                                | Terminal Villach: max. train length 600 m  
| Ax Pyhrn-Schober: Wels – Spielfeld-Straß | Line category: D4 = max. axle load: 22,5 t and 8 t/m  
|                                | Loading gauge: P/C 70, C400  
|                                | Terminal Wels: max. train length 580 m  
|                                | Terminal Graz: max. train length 680 m  

\(^5\) [http://www.oebb.at/infrastruktur/de/_p_3_0_fuer_Kunden_Partner/3_3_Schieneninfrastruktur/3_3_6_Karten/02_DMS_Dateien_/Streckenklassenkarte.jsp](http://www.oebb.at/infrastruktur/de/_p_3_0_fuer_Kunden_Partner/3_3_Schieneninfrastruktur/3_3_6_Karten/02_DMS_Dateien_/Streckenklassenkarte.jsp)

\(^6\) [http://www.oebb.at/infrastruktur/de/_p_3_0_fuer_Kunden_Partner/3_8_5_Terminal_Service_Austria/index.jsp](http://www.oebb.at/infrastruktur/de/_p_3_0_fuer_Kunden_Partner/3_8_5_Terminal_Service_Austria/index.jsp)

\(^7\) D4 will be the line category relevant for most alpine crossing UCT trains on this axis. For smaller trains on certain regional lines, however, the maximum axle load is restricted to D3 (max. axle load: 22,5t and 7,2t/m).
### France

| Ax Lyon – Chambéry – Modane | Line category: D4 = max. axle load: 22.5 t and 8 t/m  
|                           | Loading gauge: GB1 between Lyon and Saint-André-Le-Gaz, GA between Saint-André-Le-Gaz and Chambéry, GB1 between Chambéry and Italy (Fréjus railway tunnel)  
|                           | Max. train length: 750 m, except for the Autoroute Ferroviaire Alpine (550 m) |
| Ax Marseille – Vintimille | Line category: D4 = max. axle load: 22.5 t and 8 t/m  
|                           | Loading gauge: GA between Marseille and Toulon, GB between Toulon and Nice, GA between Nice and Italy  
|                           | Max. train length: 750 m |
| Line Nice-Cuneo | Line category: C4 = max. axle load: 20 t and 8 t/m  
|                  | Loading gauge: GA between Nice and Italy (tunnel de Tende)  
|                  | Max. train length: 750 m |

Gauges GA, GB and GB1 are defined in the UIC leaflet 506 and the European Standard EN 15 273. For further information, see also the network statement (particularly annexes on page 196 and following):


### Germany

As far as intermodal Alpine crossings from Germany to Switzerland/Austria are concerned, three passages are of relevance: Gotthard, Brenner and Tauern, as they are the main connections in the corridors between Germany/Benelux and Italy.

Train length of trains to and from Germany is generally limited to 740 m including the locomotive and 1600 tonnes of total weight, though exceptions can be made in regards of the maximum weight. These exceptions depend on the equipment and the locomotive (or number of locomotives) used. For reasons of productivity, many intermodal trains have a length of 600 to 650 m, in relevance to their specific routing and the length and availability of side-tracks that enable
freight trains to avoid passenger trains, with which they may share certain track sections.

The actual limits of loading gauges and maximum lengths depend on the respective origins and destinations of the specific transport, as well as the specifications of the terminal infrastructure and their respective rail connections.

Maximum train weight depends on a number of factors, such as direction, maximum velocity or different sections of infrastructure. Therefore – and this also goes for the maximum length of the train – the parameters of the particular track section are relevant. Therefore, several different parameters may apply for one connection, as different sections have different profiles. The obtainable line categories, however, indicate the maximum axle load. These are listed for all the relevant crossings between Germany and Austria / Switzerland that lead to the three main alpine crossings Gotthard, Brenner and Tauern.
### Connection from Offenburg/Freiburg to Switzerland via Basel
- Line category: D4
- Max. axle load: 22,5 t and 8 t/m
- Intermodal gauge: C400/P70

### Connection from Ulm/Stuttgart to Switzerland via Singen/Lindau
- Line category: D4
- Max. axle load: 22,5 t and 8 t/m
- Intermodal gauge: C410/P80

### Connection from Augsburg to Austria via Hechendorf
- Line category: CE
- Max. axle load: 20,0 t and 8 t/m (6 axles)
- Intermodal gauge: n/a

### Connection from Munich into Austria via Raubling
- Line category: D4
- Max. axle load: 22,5 t and 8 t/m
- Intermodal gauge: n/a

### Connection from Munich into Austria via Salzburg
- Line category: D4
- Max. axle load: 22,5 t and 8 t/m
- Intermodal gauge: C410/P80

As stated, these are only the direct border crossings. As several of the intermodal networks have some significance to Alpine crossings, the specific parameters per connection may vary, though most of the main lines are of the D4 standard category, with maximum train lengths between 600 and 700 m (excluding traction).

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**Italy**

Information on train lengths and loading gauges are available on the *Network Statement* of the Italian infrastructure operator (RFI SpA), while as to the train weight different factors contribute to its definition:

- Line slope
- Type of the traction means
- Maximum available speed

Therefore it is not possible to determine the train weight on a fixed line stretch, so the maximum axial weights are indicated. The limits regarding maximum axial weight, loading gauge and maximum train length on the eight Alpine crossings are the following:
### Review on Combined Transport

**Ax Ventimiglia:**
Ventimiglia – Genova
- Line category: D4 = max. axle load: 22,5 t and 8t/m
- Loading gauge: P/C 22, C341
- Train length: 500 m

**Ax Modane:**
Modane – Torino
- Line category: D4 = max. axle load: 22,5 t and 8t/m
- Loading gauge: P/C 45, C364
- Train length: 600 m

**Ax Domodossola:**
Iselle/Domodossola – Novara Boschetto via Borgomanero
- Line category: D4 = max. axle load: 22,5 t and 8t/m
- Loading gauge: P/C 80, C405 (Iselle-Domodossola)
- Train length: 575 m

**Ax Luino:**
Luino – Gallarate
- Line category: D4 = max. axle load: 22,5 t and 8t/m
- Loading gauge: P/C 50, C380
- Train length: 600 m

**Ax Chiasso:**
Chiasso – Milano Smistamento
- Line category: D4 = max. axle load: 22,5 t and 8t/m
- Loading gauge: P/C 60, C384
- Train length: 600 m

**Ax Brennero Ax:**
Brennero – Verona Quadrante Europa
- Line category: D4 = max. axle load: 22,5 t and 8t/m
- Loading gauge: P/C 80, C410
- Train length: 600 m

**Ax Tarvisio Boscoverde:**
Tarvisio Boscoverde – Cervignano Smistamento
- Line category: D4 = max. axle load: 22,5 t and 8t/m
- Loading gauge: P/C 80, C410
- Train length: 625 m

**Ax Villa Opicina:**
Villa Opicina – Cervignano Smistamento/Trieste C M
- Line category: D4 = max. axle load: 22,5 t and 8t/m
- Loading gauge: P/C 80, C410
- Train length: 600 m

See also the website of RFI – Rete Ferroviaria Italiana:
⇒ [www.rfi.it](http://www.rfi.it)

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**Slovenia**

All over the Slovenian railway network the loading gauge is UIC-C.
The axes crossing Alps in Slovenia are as follows:

**Koper – Ljubljana – Jesenice – Austrian border**
- Salzburg
  - Train length: 500 m
  - No. of locomotives for hauling of single CT train: 1-3

**Koper – Ljubljana – Maribor – Austrian border**
- Graz
  - Train length: 500/550 m
  - No. Of locomotives for hauling of single CT train: 2
  -(depending on gross weight of train)
<table>
<thead>
<tr>
<th>Route</th>
<th>Details</th>
</tr>
</thead>
</table>
| Ax Lötschberg-Simplon: Basel – Domodossola | - Line category: D4 = max. axle load: 22.5 t and 8t/m  
- Loading gauge: P/C 80, C400  
- Train length: 750 m |
| Ax Chiasso: Basel – Chiasso | - Line category: D4 = max. axle load: 22.5 t and 8t/m  
- Loading gauge: P/C 60, C384 (P/C 80, C410)*  
- Train length: 650 m (750 m)* |
| Ax Chiasso: Basel – Luino  | - Line category: D4 = max. axle load: 22.5 t and 8t/m  
- Loading gauge: P/C 50 (P/C 80, C410)*  
- Train length: 600 m (700 m)* |

*(enhancement until 2020)

For further details see the different *network statements* (SBB 2014, 2015; BLS 2014, 2015; SOB 2014, 2015) and path catalogues:

2.2 Intentions to build or upgrade infrastructure or to implement new systems/concepts for Ax CT

Picture: Polzug
(1) Building of new infrastructure

The following new infrastructure facilities (tunnels\(^8\)) will contribute to the expansion of the Austrian railway network and also allow more efficient Combined Transport services in Austria:

- **Koralmtunnel (part of the TEN-T Baltic-Adriatic Axis)**
  - Between *Frauental an der Laßnitz* in Styria (AT) and *Sankt Andrä* in Carinthia (AT)
  - Length of the tunnel: 32.9 km
  - Planned completion: 2023
  - Expected speed: 200 km/h

- **Semmering base tunnel (part of the TEN-T Baltic-Adriatic Axis)**
  - Between *Gloggnitz* in Lower Austria (AT) and *Mürzzuschlag* in Styria (AT)
  - Length of the tunnel: 27.3 km
  - Planned completion: 2024
  - Expected speed: 230 km/h

- **Brenner Base Tunnel (part of the TEN-T Berlin-Palermo Axis)**
  - Between *Innsbruck* in Tyrol (AT) and *Franzensfeste/Fortezza* (I)
  - Length of the tunnel: 55 km
  - Planned completion: 2025

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\(^8\) [http://www.oebb.at/infrastruktur/de/5_0_fuer_Generationen/5_4_Wir_bauen_fuer_Generationen/5_4_1_Schieneninfrastruktur/Suedstrecke/Koralmbahn/index.jsp](http://www.oebb.at/infrastruktur/de/5_0_fuer_Generationen/5_4_Wir_bauen_fuer_Generationen/5_4_1_Schieneninfrastruktur/Suedstrecke/Koralmbahn/index.jsp)

[http://www.oebb.at/infrastruktur/de/5_0_fuer_Generationen/5_4_Wir_bauen_fuer_Generationen/5_4_1_Schieneninfrastruktur/Suedstrecke/Semmering_Basistunnel/Das_Projekt/index.jsp](http://www.oebb.at/infrastruktur/de/5_0_fuer_Generationen/5_4_Wir_bauen_fuer_Generationen/5_4_1_Schieneninfrastruktur/Suedstrecke/Semmering_Basistunnel/Das_Projekt/index.jsp)

The projects listed above are included in the Austrian medium term railway investment plan “Rahmenplan 2016-2021”\(^9\) and the long term investment strategy of ÖBB (Zielnetz 2025+\(^{10}\)). Both concepts are embedded in the Austrian Transport Policy Plan (Gesamtverkehrsplan\(^{11}\)).

(2) Upgrading of existing infrastructure on the Brenner Axis

Not only building of new infrastructure facilities is included in the medium term railway investment plan of the Austrian Federal Railways “Rahmenplan 2016-2021”, but also several upgrades of existing infrastructure facilities, such as intermodal terminals to overcome capacity restraints.

For instance, in the summer of 2012, rail tracks, bridges, tunnels and drainage facilities were renewed and the power supply was modernized on the Brenner axis.

(3) Implementing new systems/concepts/techniques for Ax CT

In the framework of the Innovation programme for combined freight transport 2015-2020, financial support for the implementation of innovative technologies and for Combined Transport equipment is offered. Thus, for example, the “Mobiler”, an innovative possibility for horizontal transhipment, which was financially supported in this programme, nowadays accounts for a considerable market share in Austria. For further information, refer to the bmvit website in German language:

\[\text{http://www.bmvit.gv.at/innovation/mobilitaet/kombigueter/index.html}\]

In addition, the Austrian Federal Ministry for Transport, Innovation and Technology offers a new R&D-programme called Mobility of the future. This programme focuses, among others, on the mobility of goods and therefore also financially supports new innovative vehicle technologies and transport infrastructure. For further information, please refer to the bmvit-website in German language:

\[\text{http://www.bmvit.gv.at/innovation/mobilitaet/mobilitaetderzukunft.html}\]

The programmes mentioned above generally aim at favouring the development of new systems and techniques in combined transport. Austria will therefore continue to support innovative CT systems financially within the framework of these programmes, which in turn should help to increase the efficiency of Combined Transport in general.

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\(^{10}\) \[\text{http://www.oebb.at/infrastruktur/de/5_0_fuer_Generationen/5_4_Wir_bauen_fuer_Generationen/5_4_1_Schieneinfrastruktur/Zukunftsbahn_Zielnetz_2025/}\]

\(^{11}\) \[\text{http://www.bmvit.gv.at/verkehr/gesamtverkehr/gvp/index.html}\]
France

The two main projects concerning transalpine freight infrastructures or services are:

- an important upgrade of the Autoroute Ferroviaire Alpine between Aiton and Orbassano, by an increase of the number of return journeys and probably an additional terminal. An invitation to tender is under way.
- the Lyon-Turin project, by building a new basis tunnel between France and Italy and upgrading access railways. The long-term objective is to have a dedicated freight line.

Germany

(1) Building of new infrastructure

The following projects are currently under construction or in development and will help to enlarge the capacity of the named rail sections, therefore presenting a benefit not only to passenger transport but also to rail freight transport.

- Stuttgart – Ulm: A new connecting section between Wendlingen (Neckar) and Ulm is currently being built to connect the south of Germany to the European high speed rail network.

- Project VDE No. 8: A high speed connection which runs between Munich and Berlin is currently under construction. High speed for passenger trains will be allowed to travel up to 300 km per hour, increasing the capacity of the connection.

- Rhein/Main – Rhein/Neckar: A new connection between Frankfurt/Main and Mannheim will close the gap in the high speed line between Cologne and Stuttgart. This will also close the gap in the corresponding TEN-T net. The length is 85 kilometres, passenger trains will be allowed to travel as fast as 300 kilometres per hour, increasing the capacity of the connection.
Concerning intermodal terminals, a terminal for the chemical industry has been built in Burghausen, in the south of Germany, which will have a capacity of about 50,000 TEU per year (in a second phase: 80,000 TEU). It is scheduled to go into service in 2014. In Duisburg-Ruhrort Hafen and Lehrte are new terminals under construction, each providing a capacity of more than 150,000 TEU and configured as railway hubs for their region (see also under C.). The opening is planned for 2014 (Duisburg) / 2016 (Lehrte). Also, with the finalisation of the JadeWeserPort in Wilhelmshaven, there is another access point to deep sea shipping, which may have a significant impact to intermodal hinterland transport in the future.

(2) Upgrading of existing infrastructure

As for intermodal German terminals, there have been several upgrades to overcome capacity restraints in recent time. Especially the following terminals with international relevance have been upgraded.

- Munich Riem:
  Munich was updated in 2012 and now has a capacity of 530,000 TEU per year. It consists of three modules and six gantry cranes.

- Cologne Eifeltor:
  Started in 1969, the terminal was updated in 2012, now with a capacity of 550,000 TEU per year and a total of 8 gantry cranes.

- Ludwigshafen:
  The terminal was upgraded with another module and now has a capacity of 380,000 TEU per year.

- Rail connection Karlsruhe – Basel / Katzenberg tunnel:
  The connection between Karlsruhe and Basel is an important European connection between Rotterdam (Dutch harbours) and Genova (Mediterranean). The section between Karlsruhe and Basel is about 150 years old and handles more than 250 trains per day. In order to enlarge the capacity, the number of simultaneous rail tracks will be upgraded to four tracks. In December 2012, the Katzenberg tunnel, one of the most modern rail tunnels in Europe, was put into service.

(3) Implementing new systems/concepts/techniques for Ax CT

The most important development in intermodal transport will be the so-called “MegaHub”, an automated transhipment terminal in Lehrte near Hannover. The original concept of this facility was designed to quickly switch loading units between trains (train hub), using automated horizontal transhipment devices. The facility is planned to go into service not before 2016. The facilitation of the transhipment may add additional capacity to the
entire net, as it speeds up intermodal processes and transfers the attribution of loading units to appropriate trains from the harbours to the MegaHub.

Other rail tracks that are being planned and may have a significant impact on German intermodal connections are the Y-Axis (Y-Trasse), connecting the ports of Hamburg and Bremen to the central rail hub Lehrte, and the German part of the Betouwe Route, connecting the ARA ports with the German hinterland.

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**Italy**

(1) **Building of new infrastructure**

On the Alpine crossings interventions of development aimed at increasing rail infrastructures capacities for the different types of transport and especially of goods transport are foreseen. The facilities are planned in the *Contract of Program 2012-2016 – Investment Parts*, between the Ministry of Infrastructure and Transport and the Italian Rail Network S.p.A. (pending approval).

The investment programme is structured according to European Corridors TEN-T and hereunder some facilities provided on the Alpine lines are reported, which are part of the same corridors and in this case they are mentioned as “implementing phase”. If nothing is indicated, it is the case of “planned” investments which are in the phase of feasibility/planning.

- **Domodossola – Novara/Milano (Part of TEN-T Core Network corridor Genova – Rotterdam)**
  - Upgrading of line Gallarate-Rho (implementing phase)
  - Upgrading of south access lines of Simplon crossing: Doubling Vignale-Oleggio-Arona

- **Chiasso – Milano (Part of TEN-T Core Network corridor Genova – Rotterdam)**
  - Quadrupling of line Chiasso-Monza
  - Upgrading of line Bergamo-Seregno (East Gronda of Milano)
- **Luino – Novara/Gallarate (Part of TEN-T Comprehensive Network lines Genova – Rotterdam)**
  - Doubling *Laveno-Luino* (Goods West Gronda Milano)

- **Ventimiglia – Genova (Part of TEN-T Comprehensive Network lines Genova – Rotterdam)**
  - Doubling *Genova – Ventimiglia* (Finale-Andora-S.Lorenzo-Ospedaletti) (implementing phase)

- **Trieste – Divaca and Torino – Lione (Part of TEN-T Core Network “Mediterranean Corridor”)**
  - New line *Trieste – Divaca*
  - New line *Torino – Lyon* (priority intervention on Italian side) (implementing phase)
  - *Torino Belt* and connection to new line *Torino – Lyon*

- **Brennero – Verona (Part of TEN-T Core Network corridor Helsinki – Valletta)**
  - *Brenner Base Tunnel* (Italian part) (implementing phase)

- **Udine-Cervignano (Part of TEN-T Core Network “Baltic-Adriatic Corridor”)**
  - Doubling *Udine – Cervignano* and *Udine* connection

**2) Upgrading of existing infrastructure**

Infrastructure interventions have been identified in order to improve the network performances for goods transport as regards the “loading gauge” of the lines, allowing trains to circulate carrying goods of higher volume (e.g. containers, swap bodies and semi-trailers) as well in terms of “length of trains”, allowing the circulation of longer trains. Such interventions will allow rail undertakings to give better services and expand their own reference market. Also these interventions have been reported into the *Contract of Program 2012-2016 – Investment Part* between the Ministry of Infrastructure and Transport and the Italian Rail Network S.p.A. (pending approval).
On 28 January 2014 Italy and Switzerland signed an agreement on the financing of the extension of the planned works for the two rail crossings of *Chiasso* and *Luino* connection from *Basel* to the North of Italy. Under the agreement, Italy will invest 40 million Euros on the *Milan – Chiasso*, part of the strategic *Rotterdam-Genoa Corridor* inserted into the TEN-T European Union. Switzerland will provide € 120 million Euros for the adjustment of tunnel gauges on the alternative route of *Luino* line for the transport of goods, which is part of the comprehensive network. The adjustment will allow the passage of loads of goods with corner height of 4 meters and the use of freight trains with the length of 750 meters.

The above mentioned 40 million Euros foreseen by Italian side for the line *Milan – Chiasso* have already been allocated by the Law-Decree and included into the *Accordo di programma for the biennium 2014-2016 with RFI*.

(3) **Implementing new systems/concepts/techniques for Ax CT**

In order to improve intermodal transport by promoting the handling of UTI, studies and researches have been carried out aimed at identifying interventions to realize new infrastructures in ports and hubs as well to reinforce connections to the national network. The relating costs are reported into the mentioned *Contract of Program 2012-2016 – Part Investments*.

**Slovenia**

Slovenia is just creating a new infrastructure programme (*Draft Programme for Transport Infrastructure 2020 with the vision 2030*).
(1) Current railway infrastructure situation

There are 2 TEN-T Core Network corridors crossing Slovenia:

- **Baltic-Adriatic Corridor**
  The Baltic-Adriatic Corridor extends from the Polish ports Gdansk and Gdynia and from Szczecin and Swinoujscie via Czech Republic or Slovakia and through eastern Austria to the Slovenian port of Koper and to the Italian ports of Trieste, Venice and Ravenna. It covers rail, road, airports and ports.

- **Mediterranean Corridor**
  The Mediterranean Corridor links the Iberian ports of Algeciras, Cartagena, Valencia, Tarragona and Barcelona through Southern France, with link to Marseille, and Lyon to Northern Italy, Slovenia and a branch via Croatia to Hungary and the Ukrainian border. The key project is the Karst crossing Trieste/Koper – Ljubljana.
Switzerland

- Realisation of flat rail link on the Gotthard axis (Gotthard Base Tunnel to go into operation at the end of 2016, Generi Base Tunnel in 2018)
- Construction of a 4-metre corridor on the Gotthard axis between Basel and the Italian border (decided by the Swiss parliament in 2013):
  - Expansion of loading gauge (profile PC 80)
  - Safeguarding access to transhipment terminals south of the alps
  - Completion by end of 2020
- Measures on open stretches of track and tunnels (adaptations, new builds)
- New infrastructure Tunnel Bözberg as major measure
- Creation of additional handling capacities for Combined Transport (see MoU with Italy: Terminal Milano Smistamento as new project; Basel Nord / Limmattal)

In Switzerland, an innovative logistic concept including freight infrastructure and service operation concept is under discussion, but due to outstanding political decisions, it is for the time being without any formal framework definitions, stakeholder composition or financial mechanisms.

- Name: Cargo souterrain (CST)
- ➲ http://www.cargosousterrain.ch/de/
The project is based on an underground tube system between cities for automated freight transport units, linked by hubs to distribution operation centers. There is no alpine specific element, it is more focused on transport logistics and bottleneck solution in the Swiss midlands (plateau central/ Mittelland), where congestion on existing road infrastructure is already problematic and increased fine distribution by rail would be disproportionally expensive. The project is oriented in the long term perspective due to heavy infrastructure investments which would be necessary for implementation.
3. Offers for (Alpine crossing) Combined Transport services

3.1. Terminals offering Combined Transport services
Austria

(1) ACT-Terminals:

- Brennersee
- Wörgl
- Salzburg
- Wels
- Villach

Source: http://www.verkehr.co.at/hubs-services
ACT-Terminals in operation


(2) UCT-Terminals:

The following UCT-Terminals are publicly accessible:

- Wien Freudenau
- Wien Nordwest (will be shut down in 2016 and substituted by Güterverkehrscentrum Wien Süd)
- Krems
- Linz Stadthafen
- Enns Hafen
- Wels
- Kapfenberg
- Graz Cargo Center
- St. Michael
- Salzburg
- Villach
- Hall in Tirol
- Bludenz
- Wolfurt
UCT-Terminals in operation
Source: http://www.bmvit.gv.at/verkehr/gesamtverkehr/logistik/terminalhandbuch/index.html

France

Main combined transport terminals concerning transalpine CT are:

- Chalon-sur-Saône
- Dijon Gevrey
- Le Boulou
- Le Havre Soquence
- Marseille Canet
- Miramas Clésud
- Mouguerre
- Paris Chapelle
- Paris Gennevilliers
- Paris Noisy-le-Sec
- Paris Valenton 1
- Paris Valenton 2
- Lyon Saint-Priest
- Lyon Vénissieux
- Perpignan
The single desk has to be asked for any request concerning the precise location of the sites and the offered services:

Réseau ferré de France  
Pôle commercialisation et planification, Direction commerciale  
Guichet Unique  
92 avenue de France  
75648 PARIS CEDEX 13  
Télécopie: Guichet Unique - + 33 (0)1 53 94 38 22  
Mail: GuichetUnique@rff.fr, Téléphone: + 33 (0)1 53 94 10 11

Germany

In Germany, there are almost 150 intermodal terminals of which the majority have at least some significance to Alpine crossing. Terminals of importance to Alpine transport flows in terms of accompanied intermodal transport are Freiburg and Regensburg. Terminals of importance to Ax in terms of unaccompanied intermodal transport are Ludwigshafen, Karlsruhe, Nuremberg, Munich and Ulm, to name but a few. Of course, all harbours are of relevance to Ax. The services are manifold, most common services (transport of all known types of loading units, repair etc.) are offered by the main terminals.
The most important hubs for Alpine transports are the BASF-operated terminal in Ludwigshafen (esp. for chemical transports) and the terminals of Deutsche Bahn in Munich Riem, Cologne Eifeltor and Basel – Weil am Rhein. In Freiburg, there is a terminal for the Rolling Road. Also, many terminals along the river Rhine, especially in the densely populated Ruhr-region (e.g. the Duisport Group) are relevant to transports crossing the Alps. The following list includes only the most important locations with direct relevance:

- Munich Riem
- Ludwigshafen
- Cologne Eifeltor
- Freiburg
- Ulm Nord
- Basel – Weil am Rhein
- Stuttgart
- Ingolstadt
- Karlsruhe
- Nuremberg
- And, of course, all sea ports (Hamburg, Bremerhaven, Lübeck, Rostock, Kiel, Wilhelmshaven JadeWeserPort)

Some important intermodal terminals in Northern Italy are:

- Bologna Interporto (UCT)
- Busto-Arsizio/Gallarate (UCT)
- Milano Smistamento – Segrate (UCT)
- Trento (ACT + UCT)
- Torino Orbassano (ACT)
- Novara Boschetto (UCT) / CIM (UCT) / Fidia (ACT)
- Padova (UCT)
- Verona Quadrante Europa (UCT)

For further information see:

/www.intermodal-terminals.eu/database
A general overview about terminals and connections in the North of Italy is shown below.

For the transalpine railway connections see also the map on:  

For the core and comprehensive TEN-T network see:  

Indicated below are the most important hubs pertinent to border crossing lines which represent rail-road terminals and are part of the TEN-T Core Network:

- Torino Orbassano
- Milano Smistamento – Segrate
- Novara Boschetto
- Padova Interporto
- Bologna Interporto

Other relevant intermodal hubs located in Northern Italy are:

- Busto-Arsizio/Gallarate
- Trento
- Verona Quadrante Europa
See also the list indicated in “Il Piano nazionale della logistica 2012 – 2020” (Ministero delle infrastrutture e dei trasporti, Consulta generale per l’autotrasporto e la logistica, 2012, p. 108):


Other Italian terminals can be found in annex 2 and 3 to “Analisi strutturale del trasporto combinato ferroviario ed aereo e proposte di potenziamento” (p. 172 ff.) from the final report of Consulta generale per l’autotrasporto e la logistica (see the website above).

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**Slovenia**

- **Koper logistics centre**
  - Logistics centre offers all modes of CT including RoRo
  - Slovenian railways ensure a direct connection from the Port of Koper to various destinations in Slovenia and countries of Middle and Eastern Europe. Besides many direct trains also offer daily transport of consignments to the Ljubljana Zalog station, where they are distributed in many international trains. Trains also run from Koper to Sežana and from Maribor Tezno to Koper.
  - Port of Koper offers a complete logistical service, including access to the port terminals, fitted for loading and unloading of diverse freight.
CT terminal Ljubljana

- ACT and UCT
- organising combined transports inland and internationally
- transporting intermodal transport units (ITU) by rail and road
- loading and unloading and storing full and empty ITU
- inspections and repairs of ITU
- consolidation of the goods in ITU
  (collecting, loading and unloading, emptying, transhipment)
- storing Frigo containers (16 connections)
- railway accompanied combined transport with the partner Adria Kombi
- performing all customs activities for our customers
- preparing transit declarations
- organising customs clearance of ITU
- all activities, connected to the Intercontainer branch office

CT terminal Maribor:

- ACT and UCT

Container terminals / transfer stations Celje and Maribor

- organising combined transports inland and internationally
- transporting intermodal transport units (ITU) by rail and road
- transhipment and storing of full and empty ITU

For additional information see:

http://www.slo-zeleznice.si/en/freight/services/combined_transport
Switzerland

- Terminal Hafen-Kleinhüningen (contargo/swissterminal)
- Terminal Basel Wolf (Hupac/SBBC)
- Terminal Frenkendorf (swissterminal)
- Terminal Rekingen
- Terminal Aarau (Hupac)
- Terminal Birr (Bertschi)
- Terminal Lugano Vedeggio
- Terminal Cadenazzo
- Terminal Chiasso
- Terminal Stabio

For further information see also:

3.2. Combined Transport connections

Note:
Detailed information regarding CT connections has been consolidated and put together into consistently structured tables which are available in Annex 1.

The tables are structured in the following way: The relations are categorized by “from” and “to” country and sorted alphabetically by country. Each relation is only mentioned once and has to be considered also v.v. Only online available information is given.
3.3 Railway undertakings offering Alpine crossing CT services
In 2014, the following railway undertakings provide CT services in, to, from and through Austria. Most of them will also offer Ax services:

- Cargo Serv – Cargo Service GmbH
- GKB – Graz Köflacher Bahn- und Busbetrieb GmbH
- LTE Logistik und Transport GmbH
- Raaberbahn Cargo GmbH
- Rail Cargo Group / Rail Cargo Operator
- SLB Salzburg AG für Energie, Verkehr und Telekommunikation – Salzburger Lokalbahn
- STB-Steiermarkbahn Transport und Logistik GmbH
- StLB – Steiermärkische Landesbahnen
- TX Logistik Austria GmbH
- Wiener Lokalbahnen Cargo GmbH

Main railway undertakings offering traction for transalpine CT-services are:

- SNCF
- Euro Cargo Rail

There is a large number of registered railway undertakings in Germany which offer intermodal services such as shunting etc. For a complete list refer to the xls-Files available at:

http://www.eba.bund.de/DE/HauptNavi/FahrzeugeBetrieb/EVU/EVUregister/evu_register_node.html

The main railway undertakings that perform traction on Ax relations are:
Deutsche Bahn AG / DB Schenker and its subsidiaries
⇒ www.rail.dbschenker.de
TX Logistik AG
⇒ www.txlogistik.eu
Lokomotion Gesellschaft für Schienentraktion mbH
⇒ www.lokomotion-rail.de

**Italy**

Railway undertakings licensed in Italy that perform Combined Transport on the border crossing lines are:

- Trenitalia s.p.a. – Divisione Cargo
  ⇒ www.trenitalia.com
- Rail Traction Company s.p.a.
  ⇒ www.railtraction.it
- Captrain Italia s.r.l.
  ⇒ www.captrain.it
- Serfer-Servizi Ferroviari S.r.l. – Merci
  ⇒ www.serferonline.it
- SBB Cargo Italia S.r.l.
  ⇒ www.sbbcargo-international.com
- NordCargo S.r.l.
  ⇒ www.nordcargo.it
- Crossrail Italia s.r.l
  ⇒ www.crossrail.ch
- Hupac s.p.a.
  ⇒ www.hupac.it
- TX Logistik
  ⇒ www.txlogistik.eu
- Rail Cargo Italia s.r.l
  ⇒ www.railcargo.it
- Inrail S.p.A.
  ⇒ www.inrail.it
- Ferrovie Udine Cividale s.r.l. – Merci
  ⇒ www.ferrovieudinecividale.it/trasporto-merci

For a complete list of the Italian railway companies see also:
⇒ www.mit.gov.it/
⇒ www.ansf.it
Moreover, on the ANSF website there is a list available showing the certificates issued by ANSF in the years 2012 and 2013.

**Slovenia**

- Slovene Railways Company
  - [http://www.slo-zeleznice.si](http://www.slo-zeleznice.si)
  - [http://www.slo-zeleznice.si/en/freight/services/combined_transport](http://www.slo-zeleznice.si/en/freight/services/combined_transport)
- Adria Kombi
  - [http://adriakombi.si/](http://adriakombi.si/)

**Switzerland**

- BLS Cargo
- SBB Cargo International
- SBB Cargo
- Crossrail
- TX Logistik
- DB Schenker Rail CH
- Railcare (no transit, only domestic transport)
- Transalpin Eisenbahn
3.4 CT operators and big forwarders organizing Alpine crossing UCT
In 2015, the bmvit commissioned a study analysing important actors/services regarding combined transport in Austria. According to this study, which was effected by TRAFFIX\(^\text{12}\), the following CT operators based in Austria were identified:

(1) **CT-operators based in Austria**

- CEL Logistik Company GmbH
- IMS – Intermove Systems Speditions und Transport GmbH
- Interlogistik Ges.m.b.H.
- Kühne + Nagel GmbH
- LKW Walter Internationale Transportagentur AG
- Rail & Sea Speditions GmbH
- Rail Cargo Group / Rail Cargo Operator
- Road & Rail Internationale Speditionsgesellschaft m.b.H
- Roland Spedition GmbH
- TFG – Transfracht Internationale Gesellschaft für Kombinierten Güterverkehr
- w.combi cargo Transportlogistik GmbH & Co KG

The study by TRAFFIX mentioned above also listed forwarders based in Austria. Some of the more important ones are referred to below:

(2) **Big forwarders based in Austria**

- A. Nußbaumer Transportgesellschaft m.b.H.
- Berkmann GesmbH & Co.
- Bertschi Austria GmbH
- Cervinka Transporte
- Containerdienst Hans Hämmerle Gesellschaft m.b.H.
- Danu Transport GmbH
- Duvenbeck Speditions- und Transport-Gesellschaft mbH
- Eurotrans Speditionsgesellschaft m.b.H.
- Fritz Mayer Internationale Spedition und Transport GmbH
- Gartner KG
- Gebrüder Weiss Gesellschaft m. b. H.
- Hans Piwonka Speditions- und Transportgesellschaft mbH
- Hoyer Austria Ges.m.b.H.

JCL Austria AG
Johann Berger Transport und Reparatur GesmbH
Johann Strauss GmbH & Co. KG
Kapeller Internationale Spedition
Karl Schmidt Speditionsgeellschaft mbH
Köbrunner Handels- und Gütertransporte GmbH
Kühne + Nagel Gesellschaft m. b. H.
LKW Walter Internationale Transportorganisation AG
Logwin Solutions Austria GmbH
Lugmair Handels- und Transport GesmbH
Migolog GmbH
Montan Speditions GesmbH
Nothegger Transport Logistik GmbH
Panalpina Welttransport GmbH
Quehenberger Logistics GmbH
Richler Transport- und Handelsgesellschaft mbH
Schachinger Logistik Holding GmbH
Schenker & Co AG
Schildecker GmbH
Silojet Transport- und Handels GmbH
UBC Austria GmbH
UnitCargo SpeditionsgmbH
Van den Bosch Transporte GmbH
Wenzel GmbH Logistics

It is fairly likely that most (if not all) CT operators and forwarders quoted above organise Ax Combined Transport.
### France

#### (1) Main CT operators based in France

<table>
<thead>
<tr>
<th>CT operator</th>
<th>Operated sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decor</td>
<td>Paris Valenton 1</td>
</tr>
<tr>
<td>37 quai de Bosc</td>
<td></td>
</tr>
<tr>
<td>34200 SETE</td>
<td></td>
</tr>
<tr>
<td>+33 (0)4 67 18 64 81</td>
<td></td>
</tr>
<tr>
<td>Naviland Cargo</td>
<td>Cognac, Dijon Gevrey, Bordeaux Hourcade, Le Havre Soquence, Marseille Canet, Paris Chapelle, Toulouse Saint Jory, Paris Valenton 1, Lyon Vénissieux</td>
</tr>
<tr>
<td>15-17 allées de l'Europe</td>
<td></td>
</tr>
<tr>
<td>92588 CLICHY CEDEX</td>
<td></td>
</tr>
<tr>
<td><a href="http://www.naviland-cargo.com">www.naviland-cargo.com</a></td>
<td></td>
</tr>
<tr>
<td>Novatrans</td>
<td>Avignon Courtine, Noisy-le-Sec, Paris Valenton 1, Paris Valenton 2, Lyon Saint-Priest</td>
</tr>
<tr>
<td>Cap West</td>
<td></td>
</tr>
<tr>
<td>15-17 allées de l'Europe</td>
<td></td>
</tr>
<tr>
<td>92558 CLICHY CEDEX</td>
<td></td>
</tr>
<tr>
<td>+33 (0)1 40 87 97 00</td>
<td></td>
</tr>
<tr>
<td><a href="http://www.novatrans.fr">www.novatrans.fr</a></td>
<td></td>
</tr>
<tr>
<td>T3M</td>
<td>Paris Valenton 1</td>
</tr>
<tr>
<td>1 rue Pierre Sémard</td>
<td></td>
</tr>
<tr>
<td>94460 VALENTON</td>
<td></td>
</tr>
<tr>
<td>+33 (0)1 41 94 16 50</td>
<td></td>
</tr>
<tr>
<td><a href="http://www.t3m.fr">www.t3m.fr</a></td>
<td></td>
</tr>
<tr>
<td>Perpignan Saint-Charles</td>
<td></td>
</tr>
<tr>
<td>Conteneur Terminal SAEML</td>
<td></td>
</tr>
<tr>
<td>320 avenue de Barcelone</td>
<td></td>
</tr>
<tr>
<td>66000 PERPIGNAN</td>
<td></td>
</tr>
<tr>
<td>+33 (0)4 68 81 96 09</td>
<td></td>
</tr>
</tbody>
</table>

The single desk has to be asked for any request concerning the sites of Le Havre Plaine, Toulouse Fenouillet and Orleans:

Réseau ferré de France
Pôle commercialisation et planification, Direction commerciale
Guichet Unique
92 avenue de France
75648 PARIS CEDEX 13

Télécopie: Guichet Unique - + 33 (0)1 53 94 38 22
Mail: GuichetUnique@rff.fr, Téléphone: + 33 (0)1 53 94 10 11
The following operators were listed by the German-based DVZ, a specialist magazine for transport in Germany, in 2012/2013:

- boxXpress.de GmbH Hamburg  
  [http://www.boxxpress.de](http://www.boxxpress.de)
- Contargo GmbH & Co. KG  
  [http://www.contargo.net](http://www.contargo.net)
- DB Schenker BTT GmbH  
  [http://www.btt-gmbh.de/btt-de/start/](http://www.btt-gmbh.de/btt-de/start/)
- DHL Freight GmbH Köln  
  [http://www.dhl.de/de/logistik/frachttransport/land-schienentransport.html](http://www.dhl.de/de/logistik/frachttransport/land-schienentransport.html)
- Emons Rail Cargo GmbH  
- Eurogate Intermodal GmbH  
  [http://www1.eurogate.de/Leistungen/Intermodaler-Transport/EUROGATE-Intermodal/](http://www1.eurogate.de/Leistungen/Intermodaler-Transport/EUROGATE-Intermodal/)
- Hellmann Worldwide Logistics GmbH & Co. KG  
  [http://www.hellmann.de](http://www.hellmann.de)
- IGS GmbH, Quickborn  
  [http://www.igs-logistics.de](http://www.igs-logistics.de)
- Kali-Transport GmbH / Baltic  
- Kombiverkehr Ges. f. kombinierten Verkehr mbH & Co. KG  
- Konrad Zippel Spediteur GmbH & Co. KG  
  [www.zippe124.com](http://www.zippe124.com)
- NECOSS GmbH  
  [www.acos-group.com](http://www.acos-group.com)
- Nosta Transport GmbH  
  [www.nosta.de](http://www.nosta.de)
- NTT 2000 GmbH  
  [www.acos-group.com](http://www.acos-group.com)
- Pöhland Container Logistik GmbH  
  [http://www.poehland.com](http://www.poehland.com)
- Polzug Intermodal GmbH  
  [http://polzug.de](http://polzug.de)
- TFG GmbH & Co. KG  
  [https://www.transfracht.com](https://www.transfracht.com)
- TIM Rail Eisenbahngesellschaft mbH  
  [http://www.tim-rail.de](http://www.tim-rail.de)
- TX Logistik AG, Bad Honnef  
- Weets Bahn Transport GmbH  
  [http://www.weets.eu](http://www.weets.eu)
- Willy Petersen Spedition GmbH Wasbek  
  [http://willy-petersen.de](http://willy-petersen.de)
Italy

Sources: Ministry of Infrastructure and Transport, Consulta Generale dell’Auto-trasporto: “Analisi strutturale del trasporto combinato ferroviario ed aereo e proposte di potenziamento” (giugno 2011)

Some railway operators/forwarders (see Table 7, p. 49 of the research above mentioned; see also UIC, 2012 Report on “Combined Transport in Europe, annex 9):

- Cemat
  ➤ www.cemat.it
- Alpe Adria
  ➤ www.alpeadria.com/servizi_intermodali/servizi.htm
- Ambrogio
  ➤ http://www.ambrogio.it/servizi_intermodali.php?lingua=it
- GTS (logistic service provider)
  ➤ www.gtstrasporti.com/it
- AFA
  ➤ www.ferralpina.com

See also the following website:
- Fercam
  ➤ www.fercam.com/it/carico-completo/internazionale/

Slovenia

- Slovene Railways Company
  ➤ www.slo-zeleznice.si
- Adria Kombi Company
  ➤ www.adriakombi.si
Switzerland

There are currently 28 operators active in trans-Alpine Combined Transport, the following are based in Switzerland:

- Hupac Intermodal
- Hangartner Terminal
- IMS Rail Switzerland
- ACTS AG
- Railcare
- RAipin (Rolling Motorway)
4. CT volumes

4.1. Statistical reporting

In general, Statistics Austria collects data on freight transport and on Combined Transport, but not specifically on transalpine Combined Transport. The units of measurement used are: TEU, consignments, net-tonnes, net-net-tonnes and tonne kilometres.

Furthermore, about every 5 years “Transport in Figures” is published by the bmvit (Austrian Ministry of Transport, Innovation and Technology). This publication offers a detailed statistical analysis of transport in Austria and also includes a specific chapter for alpine freight transport. It is available in German and English and was last published in January 2013.

13 www.statistik.at
France

Main data concerning transalpine freight transport come from Alpinfo and Alpifret surveys, available on the website of the Federal Office of Transport:


 Particularly Alpinfo 2012:

For French national statistics about freight transport (not specific to transalpine transport), see the website of the French ministry of sustainable development:

Germany

The most important statistics are the Special Series 8 (transport) of destatis (German department of statistics), which offers annual and monthly information on transport volumes for rail, inland navigation and high sea transports respectively. In reference to the loading units, data about the intermodal volumes can be deduced. All information is collected from the railway companies, the harbours and the inland waterway services and statistically evaluated by destatis.

Based on the series 8, a special report on combined transport in Germany is offered every two years for intermodal volumes road-rail, with the last publication for 2011 (2013 pending).

The publications of the Special Series 8 (Fachserie) are as follows:

- Inland waterway: Gueterverkehrsstatistik der Binnenschifffahrt, monthly publication with an annual summary (Fachserie 8 Reihe 4)
- Railway: Eisenbahnverkehr, monthly publication with an annual summary (Fachserie 8 Reihe 2)
- Sea transport: Seeschifffahrt, monthly publication with an annual summary (Fachserie 8 Reihe 5)
Combined Transport: *Kombinierter Verkehr*, bi-annual publication (*Fachserie 8 Reihe 1.3*)
- General information on transport: *Verkehr aktuell*, monthly publication with an annual summary (*Fachserie 8 Reihe 1.1*)
- For further information, such as transports of dangerous goods, there are other publications in the *Special Series 8*. Please refer to: [www.destatis.de](http://www.destatis.de)

All reports are available publically.

**Destatis** (the German department of statistics) has annual data on rail, inland navigation and high sea transports that give information on intermodal loading units. This information is available in:

- TEU (twenty-foot equivalent units)
- Shipments
- Net-tonnes
- Tonne kilometres

The most common measurements are net-tonnes and tonne kilometres.

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### Italy

**The Italian National Institute of Statistics** (**ISTAT**) has developed surveys on international freight transport in general. **ISTAT** has also detected statistical data on intermodal transport, but does not distinguish specifically the transalpine Combined Transport. The units of measurement used are: train-km, t, t-km in relation to different ITU.

In fact, **ISTAT** conducts a survey from 2004 on rail transport that provides statistical information in accordance with the specifications laid down in the **EC Regulation no. 91/2003** of the European Parliament and of the Council and comply with the information requirements that arose following the process of liberalization and privatization of the national railway. This survey collects, among other things, data on rail transport of goods related to all companies in the rail sector.

The field of observation is made up of all the railway companies operating in Italy (group 49.1 and 49.2 of the classification of economic activities Ateco 2007). The survey unit is the railway undertaking, or any company under public or private undertaking which provides freight service by rail.

[http://www.istat.it/it/archivio/110431](http://www.istat.it/it/archivio/110431)
Slovenia

The data and measurement that have to be collected are determined by the Article no. 9 of the Decree on CT.

According to the article 9 of the Decree on CT, the data should be collected by the agents involved in combined transport. The data are collected by Statistical Office of the Republic of Slovenia.

Article 9 of the Decree on CT:
For the preparation of data for reports which the Commission draws up for the Council of the EC on a biannual basis, all agents involved in Combined Transport in Slovenia must collect and forward to the ministry responsible for transport the following data on:

- transport links in combined transport
- the number of intermodal transport units transported along different transport links
- the number of tons transported
- transport performance in terms of tonnage/km

Switzerland

Semester reports are public and are published on the web site of the Federal Office of Transport:


  - 1st semester: publication in the following August
  - 2nd semester: publication in the following February

The information in the Federal Council’s biennial modal shift reports to the parliament is also based on these reports (see "Verlagerungsbericht 2015").


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15 Report in German: [http://www.bav.admin.ch/verlagerung/index.html?lang=de&download=NHzLpZeg7t_Lnp6l0NTU042l2Z6In1acy4Zn4Z2qZpnO2Yug2Z6gpJCDfIB.fymym162epYbg2c_JjKbNoKSn6A--](http://www.bav.admin.ch/verlagerung/index.html?lang=de&download=NHzLpZeg7t_Lnp6l0NTU042l2Z6In1acy4Zn4Z2qZpnO2Yug2Z6gpJCDfIB.fymym162epYbg2c_JjKbNoKSn6A--)


Report in Italian: [http://www.bav.admin.ch/verlagerung/index.html?lang=it&download=NHzLpZeg7t_Lnp6l0NTU042l2Z6In1ah2oZn4Z2qZpnO2Yuq2Z6gpJCDfIB.fymym162epYbg2c_JjKbNoKSn6A--](http://www.bav.admin.ch/verlagerung/index.html?lang=it&download=NHzLpZeg7t_Lnp6l0NTU042l2Z6In1ah2oZn4Z2qZpnO2Yuq2Z6gpJCDfIB.fymym162epYbg2c_JjKbNoKSn6A--)

Suivi de Zurich – Working Group
Heavy Goods Traffic Management Systems (Update May 2016)
Volume is generally measured in consignments (as per UIRR definition) and net tonnes. In the following, some exemplary statistics as published in the modal shift report 2015 are presented:

**Development of Alpine crossing road freight transport on Swiss Alpine crossings 1981-2014**

Source: http://www.bav.admin.ch/verlagerung/index.html?lang=de&download=NHtbLpZeg71Lnp6fO0UTU0421Z6h1lacy4Zn42ZpznO2YquZ2Z9sujCDfIB,fmym162epYbg2c_jKbKakKSm8A--

**Alpine crossing road freight transport by transport relation 2000-2014**

Source: http://www.bav.admin.ch/verlagerung/index.html?lang=de&download=NHtbLpZeg71Lnp6fO0UTU0421Z6h1lacy4Zn42ZpznO2YquZ2Z9sujCDfIB,fmym162epYbg2c_jKbKakKSm8A--
Development of Alpine crossing rail freight transport by transport relation 2000-2014

Overall Alpine crossing freight transport on Swiss Alpine crossings by mode of transport 1984-2014 [million net-net tons]

Suivi de Zurich – Working Group
Heavy Goods Traffic Management Systems (Update May 2016)
Abbreviations

ACE Alpine Crossing Exchange
ACT accompanied Combined Transport
AETS Alpine Emission Trading System
ARA-Ports Ports of Antwerp, Rotterdam and Amsterdam
AT Austria
Ax Alpine crossing
CT Combined Transport
EC European Commission
e.g. for example
etc. et cetera
esp. especially
ETCS European Train Control System
ff. and the following pages
GTTA Goods Transfer Traffic Act
I Italy
i.e. that is
IMT intermodal transport
ITU intermodal transport unit(s)
ISO International Organization for Standardization
ISU Innovative Semi-Trailer Handling Unit
kg kilogram
km kilometre(s)
km/h kilometres per hour
LSVA Performance-related heavy vehicle fee (Switzerland)
MoU Memorandum of Understanding
NRLA New rail link through the Alps (Switzerland)
RoLa Rolling Road
RoRo Roll-on/roll-off
t tonne(s)
TEN-T Trans-European Transport Networks
TEU twenty feet equivalent unit
TSI Technical Specifications for Interoperability
UCT unaccompanied Combined Transport
UIC International Union of Railways
UIRR International Union for Road-Rail Combined Transport
v.v. vice versa
Annex 1:

- Table UCT relations
- Table ACT relations