



iMONITRAF!

Annual Report 2016

Political support for Toll Plus & agenda setting for a new phase

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Political support for Toll Plus & agenda setting for a new phase

INFRAS/Climonomics with inputs of iMONITRAF! partners

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The iMONITRAF! year 2016 at a glance

iMONITRAF! 2016 – Bringing the Toll Plus proposal to the political level

The regions along the corridors Brenner, Gotthard, Mont Blanc and Fréjus still have to cope with the highest volumes of transalpine road freight transport and are challenged to find solutions for limiting negative environmental and social impacts. Air quality limits are still exceeded in many areas and modal shift from road to rail is stagnating except along the Gotthard corridor. The regions along the four most important transit corridors thus continued their cooperation in the frame of iMONITRAF! in 2016 with a strong focus on gaining political support for the previously developed proposal on Toll Plus. Both on political and technical level, a Toll Plus System was identified as important measure to further harmonise pricing systems along and between the corridors and for bringing the common voice of the Alpine region to the attention of national and European decision makers. With the ongoing revision of the Eurovignette Directive as relevant legislative framework, a crucial window-of-opportunity exists for presenting the regional proposal on Toll Plus – framed by the overall transport strategy of the Alpine regions.

Monitoring update for the year 2015

The number of light vehicles crossing the iMONITRAF! corridors (in addition to the four corridors mentioned above, the Tarvisio is included in the monitoring system as the fifth corridor) increased by 3.2% from 2014 to 2015. In the same period, the number of heavy vehicles decreased by 1.5%. The traffic volumes on the road distributed unequally on the corridors: in 2015, 42% of the vehicles crossed the Brenner, 26% the Gotthard, 17% the Tarvisio and about 15% the Italian-French corridors (Mont Blanc and Fréjus). In comparison to 2014, the modal shift for freight transport increased on the Brenner (+1%) and on the Gotthard (0.7%). In contrast with the trend of the last years, air pollution concentrations showed an increase for both PM10 and NO₂, with the latter above the limits at the Gotthard and at the Brenner. Toll prices for road transport remained unchanged along the Gotthard, while they increased along the other four corridors, with highest rates for Fréjus and Mont Blanc. Prices of diesel and petrol decreased since 2012.

Best Practices –Pressure for limiting negative environmental impacts remains high

Several important developments can be summarized for the year 2016, including an ambitious improvement of modal shift policy measures along the Brenner corridor as well as the opening of the Gotthard rail base tunnel which is an important infrastructure element for the Swiss modal shift policy - its operation will provide important insights for the other base tunnels and for designing an effective modal shift policy.

For the **Brenner corridor**, several milestones to further develop the modal shift policy were achieved in 2016. The Land of Tyrol came to an agreement with the European Commission to re-implement the sectoral driving ban and, in addition, several other regulatory measures shall be optimised along the Brenner to reduce air pollution. Also, the regions along the Brenner took important steps to provide an optimised support framework for combined transport, as both the autonomous Provinces of Bolzano and Trento took next steps to implement relevant subsidies (legal framework implemented in Bolzano, legal framework and specific measures implemented in Trento). Overall, the regions along the Brenner have strengthened their cooperation and have continued to implement a common corridor-approach. For the **Gotthard**, the modification of the track pricing system has some relevance since the prices for freight rail transport were reduced while they were raised for passenger rail transport. For the French-Italian corridors **Mont Blanc**

and **Fréjus**, no major developments were reported in 2016. On national level, the French government has also implemented an additional subsidy to rail transport by limiting track charges on the French rail network.

The transport policy framework – developments on EU level

In 2016, several important developments at European level had a link to iMONITRAF! activities. Under the **Connecting Europe Facility (CEF)**, the Lyon urban node has been pre-identified as a major bottleneck for the North Sea-Mediterranean corridor and a capacity increase is foreseen matching with the Lyon-Turin base tunnel. In summer 2016, the European Commission published its **strategy for low-emission mobility** which frames the initiatives that the Commission is planning in the coming years, including the development of CO₂ and efficiency standards for HGV. Further, several elements of the 4th Railway Package have come into force in 2016, aiming at strengthening the internal market and at making the rail sector more competitive. Regarding environmental aspects, the adoption of the **new National Emissions Ceilings Directive (NECD)** needs to be mentioned which entered into force at the end of 2016. Once fully implemented, the Directive aims at reducing almost 50% of the negative health impacts of air pollution, such as respiratory diseases and premature death, by 2030. The most important development at EU level for the iMONITRAF! network is however still the revision of the **Eurovignette Directive**. In this process, a public consultation phase took place between July and October 2016 and iMONITRAF! used the opportunity to again present its specific proposals on Toll Plus.

The political resolution on Toll Plus – a new milestone for the cooperation

During a political roundtable in Lucerne on 2nd November 2016, political representatives of the most affected transit regions have again demonstrated their solidarity and their willingness to implement a harmonized approach. They signed a common resolution on Toll Plus which includes specific proposals for an ambitious design of Toll Plus. The Toll Plus proposal has the objective to improve internalization of over-proportional external costs in the Alpine regions and aims at a harmonization of existing pricing approaches. With their proposal, the regions also claim a share of the revenue of such a Toll Plus system, to finance accompanying environmental and intermodal projects as well as necessary modal shift infrastructures in the regions.

Discussions during the roundtable also made clear that different regional characteristics need to be considered and that the implementation of Toll Plus needs to leave some space for flexibility to take account of these regional characteristic. A common Toll Plus System needs to support the different existing policy frameworks and has to recognize different structures of the transport and logistics markets and infrastructures.

Future of iMONITRAF! – a success story to be continued

Discussions on this common measure made clear that an ambitious design of transport policies can only be achieved when all affected regions join their forces and speak with a common voice and on the basis of a sound knowledge-base. As the regions want to continue their common efforts on Toll Plus and on the implementation of their common strategy, the political roundtable in Lucerne also concluded that the cooperation under the iMONITRAF! Coordination Point shall be continued for at least two more years. Toll Plus will remain in the focus for this new period, in addition a review of the monitoring system as well as the DPSIR approach are foreseen.

iMONITRAF! Aktivitäten im Jahr 2016 – Das Wichtigste in Kürze

iMONITRAF! 2016 – Politische Unterstützung für den Toll Plus Vorschlag

Die Regionen entlang der Transitzkorridore Brenner, Gotthard, Mont Blanc und Fréjus stehen weiterhin vor der Herausforderung die negativen Auswirkungen des Transitverkehrs auf Mensch und Umwelt zu reduzieren. Grenzwerte für Luftschadstoffe werden an vielen Messstellen weiterhin überschritten und die Verkehrsverlagerung von der Straße auf die Schiene stagniert, mit Ausnahme des Gotthard Korridors. Daher setzten die Regionen entlang der vier wichtigsten Transitzkorridore ihre Zusammenarbeit im Rahmen des iMONITRAF! Netzwerkes auch im Jahr 2016 fort – mit dem Ziel den bereits definierten Vorschlag für ein Toll Plus System auf die politische Ebene zu bringen. Denn sowohl auf technischer als auch auf politischer Ebene wurde ein solches Toll Plus System als wichtiges Instrument für eine weitere Harmonisierung der Mautsysteme zwischen und entlang der Korridore identifiziert. Zudem bestehen mit Toll Plus Anknüpfungspunkte auf EU-Ebene, da aktuell die relevante Wegekosten-Richtlinie überarbeitet wird. Daher ergibt sich ein Politikfenster, um sowohl den regionalen Vorschlag zu Toll Plus als auch die gesamte Verkehrsstrategie der Alpenregionen erneut zu präsentieren.

Monitoringergebnisse 2015

Die Zahl der Personenfahrzeuge auf den fünf iMONITRAF! Korridoren (neben den oben genannten Korridoren umfasst das Monitoringsystem den Tarvisio) stieg zwischen 2014 und 2015 um 3,2% an, die Zahl der schweren Güterfahrzeuge ging zeitgleich um 1,5% zurück. Das Verkehrsvolumen verteilte sich dabei 2015 weiterhin ungleich auf den Korridoren: Während 42% der Fahrzeuge den Brenner wählten, waren es 26% entlang des Gotthard-Korridors, 17% entlang des Tarvisio und 15% auf den französisch-italienischen Korridoren (Mont Blanc und Fréjus). Im Vergleich zum Jahr 2014 stieg der Modal-Split Anteil des Güterverkehrs auf der Schiene am Brenner um 1%, am Gotthard um 0.7%. Im Vergleich zum Trend der Vorjahre stiegen die Konzentrationen der Luftschadstoffe sowohl für die NO₂ als auch für die PM₁₀-Werte an, wobei die Grenzwerte für PM₁₀ am Gotthard und Brenner über den Grenzwerten lagen. Die Mautgebühren blieben in 2015 am Gotthard konstant, an allen anderen Korridoren stiegen sie leicht an. Die höchsten Mautgebühren sind nach wie vor an den Übergängen Fréjus und Mont Blanc zu verzeichnen. Die Kraftstoffpreise für Diesel und Benzin sanken im Jahr 2015 weiterhin und setzten somit den Trend der Vorjahre fort.

Best Practices –Weiterhin großer Handlungsbedarf zur Reduktion der Umweltwirkungen

In Bezug auf Best Practices sind für das Jahr 2016 mehrere Entwicklungen zu verzeichnen, sowohl eine ambitionierte Weiterentwicklung der gemeinsamen Verlagerungspolitik am Brenner als auch die Eröffnung des Gotthard Basistunnels. Dieser stellt ein wichtiges Infrastrukturelement für die Schweizer Verlagerungspolitik dar und wird mit seinem Betrieb Erkenntnisse für die anderen Basistunnel sowie für die Weiterentwicklung einer effektiven Verlagerungspolitik liefern.

Am Brenner wurden in 2016 mehrere Meilensteine erreicht: das Land Tirol konnte sich mit der Europäischen Kommission auf eine Lösung zur Wiedereinführung des sektoralen Fahrverbots einigen, ergänzend sollen weitere ordnungsrechtliche Rahmenbedingungen am Brenner angepasst werden um die Luftqualität zu verbessern. Zudem wurde die Förderung für den kombinierten Verkehr entlang des Brenners weiterentwickelt, sowohl die autonome Provinz Bozen als auch die autonome Provinz Trento haben weitere Schritte zur Einführung von Subventionen unternommen (rechtliche Rahmenbedingungen in Bolzano geschaffen, rechtliche Rahmenbedingungen sowie konkrete Subventionen in Trento eingeführt). Insgesamt haben die Regionen ent-

lang des Brenners ihre Kooperation weiter gestärkt und weitere Hürden in Richtung eines Korridor-Ansatzes genommen. Für den Gotthard ist eine Modifizierung des Trassenpreissystems zu nennen, die zu einer Reduktion der Trassenpreise für den Güterverkehr und eine Anhebung für den Personenverkehr führt. Für die französisch-italienischen Korridore Mont Blanc und Fréjus wurden für 2016 keine relevanten Entwicklungen genannt. Auf nationaler Ebene wurden in Frankreich aber ebenfalls die Subventionen für den Schienenverkehr erhöht, da Trassenpreise auf dem französischen Schienennetz teilweise von der öffentlichen Hand übernommen werden.

Der verkehrspolitische Rahmen – Entwicklungen auf der europäischen Ebene

Auf EU-Ebene wurden im Jahr 2016 wichtige Instrumente mit Bezug zu iMONITRAF! weiterentwickelt oder neu implementiert. Im Rahmen der **Connecting Europe Facility (CEF)** wurde der Knotenpunkt Lyon als wichtiger Engpass für den Korridor Nordsee-Mittelmeer identifiziert. Im Zuge der Erstellung des Basistunnels Lyon-Turin ist eine Kapazitätserweiterung dieses Knotenpunkts vorgesehen. Im Sommer 2016 veröffentlichte die Europäische Kommission zudem ihre **Europäische Strategie für eine emissionsarme Mobilität**, die verschiedene bestehende Initiativen der Kommission zusammenfasst. Für iMONITRAF! relevant sind die Elemente der Strategie zur Entwicklung von CO₂- und Effizienzstandards für schwere Güterfahrzeuge. Zudem wurden mehrere Elemente des **vierten Eisenbahnpakets** verabschiedet, mit denen der Schienenverkehr gestärkt und dessen Wettbewerbsfähigkeit verbessert werden soll. In Bezug auf umweltpolitische Rahmenbedingungen ist die Verabschiedung der überarbeiteten **Richtlinie über nationale Emissionshöchstmengen (NEC-Richtlinie)** zu nennen, die Ende 2016 in Kraft trat. Die volle Umsetzung der Richtlinie bis 2030 soll zu einer 50%igen Reduktion der negativen Auswirkungen von Luftschadstoffen auf die menschliche Gesundheit beitragen (z.B. Atemwegserkrankungen). Die wichtigste Entwicklung auf EU-Ebene für iMONITRAF! ist jedoch die Revision der **Wegekosten-Richtlinie**, im Rahmen derer zwischen Juli und Oktober 2016 eine Konsultationsphase stattgefunden hat. iMONITRAF! hat diese Gelegenheit genutzt um erneut seine Ideen und konkreten Vorschläge für ein Toll Plus System zu präsentieren.

Die politische Resolution zu Toll Plus – ein neuer Meilenstein der Kooperation

Während des politischen Roundtables in Luzern am 2. November 2016 zeigten politische Vertreter der am stärksten belasteten Transitregionen erneut ihre Solidarität sowie ihren Willen zur Implementierung einer harmonisierten Verkehrspolitik. Sie unterzeichneten eine Resolution zu Toll Plus, die konkrete Vorschläge für die Ausgestaltung eines ambitionierten Toll Plus Systems umfasst. Der Toll Plus Vorschlag verfolgt als Hauptziel eine Internalisierung der überproportionalen externen Kosten im Alpenraum und soll zudem zur Angleichung der bisher unterschiedlichen Mautsätze beitragen. Mit ihrem Vorschlag fordern die Regionen einen Teil des Aufkommens eines Toll Plus Systems zur Finanzierung von begleitenden Umweltmaßnahmen, intermodalen Projekten sowie Infrastrukturen in den Regionen. Während des politischen Roundtables wurde zudem deutlich, dass regionale Charakteristika bei der Ausgestaltung von Toll Plus berücksichtigt werden müssen und bei der Implementierung entsprechend Flexibilität gewährleistet werden muss. Ein gemeinsames Toll Plus System muss regionale Unterschiede bei den bestehenden Rahmenbedingungen und Instrumente, bei den Strukturen des Transportgewerbes sowie den verfügbaren Infrastrukturen berücksichtigen.

Zukunft von iMONITRAF! – eine Erfolgsgeschichte geht weiter

Diskussionen rund um Toll Plus zeigten erneut die Notwendigkeit eines gemeinsamen Ansatzes: eine ambitionierte Verkehrspolitik im Alpenraum lässt sich nur erreichen, wenn die betroffenen Regionen ihre Kräfte bündeln und mit einer gemeinsamen Stimme und auf Basis einer

breiten Wissensbasis sprechen. Da die Regionen weiterhin an der gemeinsamen Umsetzung von Toll Plus und der Implementierung der Verkehrsstrategie arbeiten möchten, wurde in Luzern zudem vereinbart die Kooperation mit dem iMONITRAF! Coordination Point um weitere zwei Jahre fortzusetzen. Toll Plus wird in dieser neuen Periode im Fokus bleiben, zudem ist eine Revision des Monitoringsystems sowie des DPSIR-Ansatzes geplant.

iMONITRAF! en 2016 – Résumé

iMONITRAF! en 2016 – soutien politique pour la proposition de surpéage 'Toll Plus'

Les régions situées le long des corridors du Brenner, du Gothard, du Mont Blanc et du Fréjus sont toujours confrontées au défi posé par les impacts négatifs du trafic transalpin sur les populations et l'environnement. Les seuils relatifs à la qualité de l'air sont dépassés sur de nombreux sites et, globalement, le transfert modal de la route vers le rail est en stagnation, à l'exception du Gothard. Les régions situées le long des quatre principaux corridors de transit ont donc poursuivi en 2016 leur coopération dans le cadre du réseau iMONITRAF!, avec l'objectif de porter au niveau politique la proposition de mise en place d'un système de surpéage 'Toll Plus' définie les années précédentes. Ce système a été identifié aussi bien au niveau technique que politique comme un instrument important pour la poursuite de l'harmonisation des tarifs entre et le long des corridors de l'Arc alpin. Avec le dispositif de surpéage, des opportunités s'ouvrent également au niveau européen dans le cadre de la révision actuelle de la directive Eurovignette. Pour les acteurs du réseau, la révision de la directive est l'occasion de réaffirmer les propositions régionales sur le surpéage et la stratégie de transport des régions alpines dans son ensemble.

Mise à jour de l'Observatoire – données 2015

Le nombre de véhicules légers qui ont circulé sur les cinq corridors transalpins iMONITRAF! (Brenner, Gothard, Mont Blanc, Fréjus, Tarvisio) a augmenté de 3,2 % entre 2014 et 2015. Sur la même période, le nombre de véhicules lourds a diminué de 1,5 %. Le trafic routier reste marqué par une répartition inégale entre les corridors : en 2015, le Brenner a concentré 42 % des flux, contre 26 % pour le Gothard, 17 % pour le Tarvisio et 15 % pour les corridors franco-italiens (Mont Blanc et Fréjus). Par rapport à 2014, la part modale du ferroviaire pour le fret a augmenté au Brenner (1 %) et sur le Gothard (0.7 %). Les concentrations en polluants atmosphériques (NO₂ et PM₁₀) sont en hausse par rapport aux tendances des années précédentes, les émissions de PM₁₀ demeurant supérieures à la limite au Gothard et au Brenner. Le montant des péages routiers est resté stable pour le Gothard en 2015, et a légèrement augmenté pour les quatre autres corridors, le Fréjus et le Mont Blanc restant les plus chers. Enfin, le prix des carburants (diesel et essence) a poursuivi sa baisse en 2015, confirmant ainsi la tendance des années précédentes.

Bonnes pratiques – des efforts importants restent nécessaires pour réduire les impacts environnementaux

En matière de bonnes pratiques, plusieurs avancées ont été enregistrées en 2016, avec la poursuite d'une politique commune ambitieuse de report modal au Brenner et l'inauguration du tunnel de base du Gothard. Ce dernier joue un rôle central pour la politique de report modal en Suisse et alimentera les connaissances pour les autres tunnels de base et pour le développement d'une politique de report modal efficace.

Plusieurs évolutions importantes ont été enregistrées sur l'axe du Brenner en 2016 : le Land du Tyrol s'est mis d'accord avec la Commission européenne sur le rétablissement des interdictions de rouler sectorielles, et d'autres dispositifs réglementaires vont être ajustés en vue d'améliorer la qualité de l'air. Des avancées ont également été obtenues pour la promotion du trafic combiné le long du Brenner, avec la mise en place de nouvelles mesures d'encouragement par la Province autonome de Bolzano et la Province autonome de Trente. Les régions situées le long du Brenner ont renforcé leur coopération et franchi ainsi une nouvelle étape vers la mise en œuvre d'une approche commune par corridor. Sur l'axe du Gothard, la modification de système de tarification des sillons a entraîné une baisse du montant de la redevance sillon fret et une hausse de la redevance pour les trains de voyageurs. Sur les corridors franco-italiens du Mont Blanc et du Fréjus, il n'y a pas eu d'évolution majeure en 2016. Au niveau national, la France a cependant augmenté elle aussi les subventions pour le rail, une partie du prix des sillons du réseau français étant prise en charge par les pouvoirs publics.

Politique de transport – évolutions à l'échelle européenne

Au niveau de l'Union européenne, des instruments importants pour iMONITRAF! ont été consolidés ou mis en place en 2016. Dans le cadre du **Mécanisme pour l'interconnexion en Europe (MIE)**, la ville de Lyon a été identifiée comme un goulet d'étranglement majeur sur le corridor Mer du Nord-Méditerranée. À l'occasion de la construction du tunnel de base Lyon-Turin, il est prévu d'étendre les capacités de ce nœud ferroviaire. Par ailleurs, la Commission européenne a publié en été 2016 sa « **Stratégie européenne pour une mobilité à faibles émissions de carbone** », qui intègre plusieurs initiatives déjà mises en place par la Commission. Les éléments qui intéressent iMONITRAF! sont les mesures visant à instaurer des normes d'émission de CO₂ et des normes d'efficacité pour les véhicules lourds. Par ailleurs, plusieurs volets du **4e paquet ferroviaire** destinés à améliorer la qualité et la compétitivité des services ferroviaires ont été adoptés. En matière de politique environnementale, la version remaniée de la **Directive sur les plafonds d'émissions nationaux pour les polluants atmosphériques (directive PEN)** a été adoptée et est entrée en vigueur à la fin 2016. La mise en œuvre intégrale de la directive d'ici 2030 devra permettre de réduire de moitié les impacts négatifs des polluants atmosphériques sur la santé des populations (notamment les affections respiratoires). Pour iMONITRAF!, la principale évolution au niveau européen reste cependant la révision de la **Directive Eurovignette**, qui a fait l'objet d'une consultation publique de juillet à octobre 2016. iMONITRAF! a profité de l'occasion pour réaffirmer sa position et faire des propositions concrètes en vue de l'introduction d'un système de surpéage (Toll Plus).

La résolution politique sur le surpéage – un nouveau jalon de la coopération

Lors de la table ronde politique de Lucerne du 2 novembre 2016, les représentants politiques des régions les plus touchées par le transit alpin ont réaffirmé leur solidarité et leur volonté de mise en œuvre d'une politique harmonisée des transports. Ils ont signé une résolution sur le surpéage 'Toll Plus' proposant des mesures concrètes pour la mise en œuvre d'un dispositif ambitieux de redevances pour le fret routier. Ce système de surpéage devra permettre en particulier une meilleure intégration des coûts externes en zone de montagne où ils sont particulièrement élevés, ainsi qu'une harmonisation des différents niveaux de péage le long des corridors alpins. Les régions demandent également qu'une partie des ressources générées par un tel système leur soient redistribuées pour financer des programmes environnementaux complémentaires, des projets intermodaux ou des infrastructures régionales.

Dans le cadre de la table ronde politique, il a également été clairement souligné qu'un système de surpéage de type 'toll plus' devait prendre en compte les caractéristiques régionales, et que

sa mise en œuvre devait pouvoir être définie avec une certaine souplesse. Ce dispositif commun doit tenir compte des disparités régionales, que ce soit au niveau des cadres réglementaires et des instruments existants, de l'organisation du secteur des transports ou des infrastructures disponibles.

L'avenir de iMONITRAF! – poursuite d'une coopération fructueuse

Les discussions sur le mécanisme de surpéage ont confirmé la nécessité d'une approche commune : une politique des transports ambitieuse dans les Alpes n'est possible que si les régions mutualisent leurs forces et s'expriment d'une seule voix sur la base de connaissances solides. Réaffirmant leur volonté de se mobiliser pour la mise en œuvre d'un système de surpéage et le déploiement de la stratégie de transport, les régions ont convenu à Lucerne de poursuivre la coopération avec la cellule de coordination iMONITRAF! pour deux années supplémentaires. Le système de péage 'Toll Plus' restera l'un des principaux axes de travail du réseau pendant cette période. Une révision de l'Observatoire régional et de l'approche « DPSIR » est également prévue.

iMONITRAF! nel 2016: L'essenziale in breve

iMONITRAF! 2016 – Portare la proposta Toll Plus ad un livello politico

Le regioni attraversate dai corridoi del Brennero, del Gottardo, del Monte Bianco e del Fréjus continuano ad affrontare rilevanti problemi legati agli alti volumi di traffico merci transalpino, per i quali cercano soluzioni in grado di limitare gli impatti negativi, sia di natura sociale, sia di natura ambientale. I limiti di concentrazione di sostanze inquinanti sono ancora superati in molte aree ed, eccettuato il Gottardo, non si registrano miglioramenti significativi nel trasferimento modale dalla strada alla rotaia. Pertanto, anche nel 2016, le suddette regioni hanno proseguito la propria collaborazione all'interno del progetto iMONITRAF!, concentrandosi sul fornire un supporto politico a quella proposta di Toll Plus, che era stata sviluppata in precedenza da un punto di vista tecnico. Il Toll Plus, infatti, era stato identificato quale misura in grado di armonizzare ulteriormente il sistema dei pedaggi lungo e tra i diversi corridoi, nonché di portare all'attenzione dei decisori politici nazionali ed europei la voce comune proveniente dalla regione alpina. Con la ridefinizione della Direttiva Eurovignette come quadro legislativo di riferimento, si apre una opportunità cruciale per presentare la proposta regionale sul Toll Plus, inquadrata in una più ampia strategia sui trasporti comune alle regioni alpine.

Aggiornamento dei dati di monitoraggio per l'anno 2015

Dal 2014 al 2015, il numero dei veicoli leggeri in attraversamento lungo i cinque corridoi di iMONITRAF! (Monte Bianco, Fréjus, Gottardo, Brennero e Tarvisio) è cresciuto del 3.2%, mentre il numero dei veicoli pesanti è aumentato del 1.50%. Il volume di traffico stradale è distribuito in modo non uniforme lungo i corridoi: nel 2015, il 42% dei veicoli ha attraversato il Brennero, il 26% il Gottardo, il 17% Tarvisio e circa il 15% i corridoi italo-francesi (Monte Bianco e Fréjus). In confronto al 2014, il trasferimento modale per il trasporto merci è aumentato al Brennero (+1%) e al Gottardo (0.7%). A differenza del trend registrato negli scorsi anni, le concentrazioni di inquinamento dell'aria mostrano una crescita per le PM₁₀ e il NO₂, con quest'ultimo sopra i limiti al Gottardo e al Brennero. I prezzi dei pedaggi per il trasporto su strada sono rimasti invariati lungo il Gottardo mentre sono aumentati leggermente lungo gli altri quattro corridoi, con le quote

più alte registrate per il Fréjus e per il Monte Bianco. Infine, il prezzo di diesel e benzina è in calo anche per il 2015.

Buone pratiche – la pressione per limitare gli impatti ambientali negativi rimane elevata

L'anno 2016 ha fatto registrare diversi importanti sviluppi, tra i quali si segnalano un ambizioso programma di *policy* lungo il Brennero volto a favorire lo spostamento modale verso la ferrovia, nonché l'apertura del tunnel di base del Gottardo, la cui messa in esercizio costituisce un elemento fondamentale per un'attuazione efficace delle politiche svizzere sui trasporti. Più nello specifico, nel 2016 sono stati raggiunti diversi traguardi lungo il corridoio del **Brennero**: il Land del Tirolo è pervenuto a un accordo con la Commissione Europea per reintrodurre il divieto di transito settoriale; altre misure governative sono state previste per ridurre l'emissione di sostanze inquinanti. Inoltre, le regioni localizzate lungo l'asse del Brennero hanno intrapreso dei passi significativi, volti a fornire un supporto al trasporto combinato attraverso sussidi: la Provincia Autonoma di Bolzano ha introdotto un quadro legale di riferimento, mentre la Provincia Autonoma di Trento ha introdotto specifiche misure. Nel complesso, le regioni lungo il Brennero hanno rafforzato la loro cooperazione e hanno continuato ad adottare un approccio comune. Lungo il **Gottardo**, la variazione del costo delle tracce ha prodotto effetti rilevanti: il prezzo del trasporto merci si è ridotto, mentre è cresciuto quello del trasporto passeggeri. Per i corridoi italo-francesi del **Monte Bianco** e del **Fréjus** non si segnalano sostanziali modifiche nel 2016. A livello nazionale, il governo francese ha introdotto un ulteriore sussidio al trasporto ferroviario, limitando il costo delle tracce lungo la rete francese.

Il quadro politico dei trasporti – sviluppi a livello europeo

Nel 2016, a livello europeo, si sono registrati diversi importanti sviluppi legati alle attività di iMONITRAF!. Nel quadro del **Connecting Europe Facility (CEF)**, il nodo urbano di Lione è stato identificato come un collo di bottiglia del corridoio Mare del Nord-Mar Mediterraneo e una crescita della capacità è prevista con il tunnel di base e la linea ferroviaria alta capacità Torino-Lione. Nell'estate 2016, la Commissione Europea ha pubblicato la **strategia europea per la mobilità a basse emissioni**, che racchiude le iniziative che la Commissione intende introdurre, tra cui lo sviluppo di standard sull'efficienza e sulle emissioni di CO₂ per i veicoli pesanti. Inoltre, molti elementi del 4° pacchetto ferroviario sono divenuti operativi nel 2016, con l'obiettivo di rafforzare i mercati interni e di rendere più competitivo il settore ferroviario. Per quanto riguarda gli aspetti ambientali, merita un cenno la **nuova direttiva sui limiti nazionali di emissione**, entrata in vigore alla fine del 2016. Quando sarà integralmente adottata, la direttiva punterà a ridurre di quasi il 50% gli impatti negativi dell'inquinamento acustico sulla salute, come le malattie respiratorie o le morti premature, entro il 2030. L'elemento più importante per iMONITRAF! rimane sicuramente la revisione della Direttiva Eurovignette. Tra luglio e ottobre 2016 c'è stata una fase di consultazione pubblica, durante la quale iMONITRAF! ha potuto presentare la sua specifica proposta per il Toll Plus.

La risoluzione politica sul Toll Plus – una nuova pietra miliare per la cooperazione

Durante il tavolo politico tenutosi a Lucerna il 2 Novembre 2016, i rappresentanti politici delle regioni più colpite dal traffico transalpino, dopo aver ribadito la loro volontà di introdurre un approccio armonizzato, hanno firmato una risoluzione congiunta sul Toll Plus, che include proposte specifiche per la definizione di tale misura. Il Toll Plus ha l'obiettivo di migliorare l'internalizzazione dei costi esterni nella regione alpina, puntando al contempo a una armonizzazione dei sistemi di tariffazione esistenti. Con questa proposta, le regioni richiedono una parte

dei ricavi del Toll Plus, per finanziare misure ambientali di accompagnamento, progetti intermodali e opere infrastrutturali che garantiscano lo spostamento modale verso la ferrovia in tutte le regioni coinvolte. La discussione durante il tavolo politico ha inoltre evidenziato l'importanza di tenere in considerazione le differenti caratteristiche proprie di ogni regione, garantendo a ciascuna un certo margine di flessibilità. Un sistema comune di Toll Plus deve supportare i diversi contesti politici esistenti e deve riconoscere le differenti strutture dei mercati e delle infrastrutture.

L'anniversario di iMONITRAF! e il futuro della rete

Le discussioni sul Toll Plus hanno reso chiaro il fatto che il disegno di ambiziose politiche dei trasporti può essere raggiunto solo quando tutte le regioni coinvolte uniscono le loro forze e parlano con una voce comune sulla base di solide conoscenze. Poiché le regioni intendono continuare il proprio sforzo comune sul Toll Plus e sull'adozione di una strategia comune, il tavolo politico di Lucerna ha inoltre concluso che la cooperazione sotto il *Coordination Point* di iMONITRAF! dovrà continuare per almeno altri due anni. Il Toll Plus rimarrà il focus di questo periodo; ma sono previste inoltre una revisione del sistema di monitoraggio e dell'approccio DPSIR.

1 Background and objectives

iMONITRAF! network – a success story to be continued

Since 2005, the Alpine regions Auvergne-Rhône-Alpes,¹ the autonomous Provinces of Bolzano and Trento, the autonomous Regions of Aosta Valley and Friuli-Venezia Giulia, the Region Piemonte, the Canton of Ticino, the Region Central Switzerland, the Land of Tyrol as well as the Accademia Europea di Bolzano (EURAC) have developed a platform and knowledge-hub on transalpine transport topics. The regions along the corridors Brenner, Gotthard, Mont Blanc and Fréjus have to cope with the highest transit volumes and are challenged to find solutions for limiting negative environmental and social impacts. After the successful realisation of two projects in the frame of the Alpine Space Programme, in 2013 the iMONITRAF! network entered an independent phase with the establishment of a Coordination Point financed by the regions.

Over the last four years, the Coordination Point had the objective to implement first elements of the transport strategy of the Alpine regions as signed in May 2012 in Lyon. Especially, activities focused on the design and implementation steps of short-term common measures – with a strong focus on Toll Plus². Discussions on this common measure made clear that an ambitious design of transport policies can only be achieved when all affected regions join their forces and speak with a common voice and on the basis of a sound knowledge-base.

Objectives 2016 – Bringing Toll Plus to the political level and continuation of the network

During the Transport Forum in 2014 in Innsbruck, iMONITRAF! presented first elements of a regional proposal for a Toll Plus System. This proposal was further specified with the help of an in-depth analysis conducted by the network in 2015. Result of this in-depth analysis is an optimized scenario which includes a proposal on specific toll rates, differentiation of tolls, the consideration of regional transport as well as the use of revenues.

One of the major objectives for 2016 was to bring this specific proposal on Toll Plus to the political level and to develop a common resolution. During a political roundtable of the Brenner regions in November 2015 in Bolzano, all political representatives showed high interest in moving forward on Toll Plus and gave a mandate to develop a political document. A first draft of this document was thus prepared in spring 2016 by the technical level and fine-tuned on the basis of feedbacks from political representatives. Feedbacks made clear that there are only few critical elements which require adjustments and the network was thus able to provide a consolidated version for the political roundtable in November 2016 in Lucerne.³ During this roundtable, the resolution was agreed by representatives from all iMONITRAF! regions.⁴

As the regions want to continue their common efforts on Toll Plus and on the implementation of their common strategy, the political roundtable in Lucerne also concluded that the cooperation under the iMONITRAF! Coordination Point shall be continued for at least two more years 2017/2018. After this period, the options of merging the network with EUSALP AG 4 will be reassessed as activities under EUSALP will then have become much clearer.

¹ Please note that the region Rhône-Alpes has been merged with the region Auvergne during the regional reorganization of France in 2015. The official name of the region as well as its organizational structure were confirmed in 2016.

² Additional charging of heavy goods vehicles for the use of certain roads.

³ Please note: the final version of the political resolution on Toll Plus (available on www.imonitraf.org) includes an Annex which summarizes the discussion of the political roundtable. In this Annex, the critical elements are illustrated. Also, the resolution includes an Annex with an interpretation of the autonomous Province of Trento specifying concerns and regional considerations.

⁴ The resolution as well as the accompanying factsheet on Toll Plus are available on www.imonitraf.org

Annual Report 2016 – Insights and overview of iMONITRAF! activities

The Annual Report 2016 provides an overview on iMONITRAF! activities as well as on recent developments in the Alpine regions, on national as well as on European level. Its target groups are policy makers at the different political levels as well as the broader network working on transalpine transport policy.

The report includes recent results of the common monitoring activities, an update of Best Practices in the iMONITRAF! regions as well as an overview on relevant activities on national and European level. Being the focus of iMONITRAF! activities, the report also highlights elements of the regional Toll Plus proposal. In addition, it gives an overview on networking activities and illustrates elements for the work programme for the upcoming period 2017-2018.

2 Resolution on Toll Plus 2016 and other milestones

Political roundtable in Lucerne

During a political roundtable in Lucerne on 2nd November 2016, political representatives of the most affected transit regions have again demonstrated their solidarity and their willingness to implement a harmonized approach. They have signed a common resolution on Toll Plus which includes specific proposals for an ambitious design of Toll Plus. The Toll Plus proposal has the objective to improve internalization of over-proportional external costs in the Alpine regions and aims at a harmonization of existing pricing approaches. With their proposal, the regions also claim a share of the revenue of such a Toll Plus system, to finance accompanying environmental and intermodal projects as well as necessary modal shift infrastructures in the regions.

Discussions during the roundtable also made clear that different regional characteristics need to be considered and that the implementation of Toll Plus needs to leave some space for flexibility to take account of these regional characteristics. A common Toll Plus system needs to support the different existing policy frameworks and has to recognize different structures of the transport and logistics markets and infrastructures. Further, discussions clearly pointed to the need of further continuing the cooperation to find broader support for the Toll Plus proposal – especially at European and national level which will be necessary for implementation. At European level, the revision of the relevant framework – the Eurovignette Directive – has been launched in summer 2016 and the iMONITRAF! network will actively lobby towards the consideration of the Toll Plus proposal in this revision process. Also, the Suivi de Zurich process will conduct an in-depth analysis on Toll Plus in 2017 and it will be crucial to establish a close exchange with this process.



Figure 1: Impressions of the political roundtable on 2nd November 2016 in Lucerne: Political representatives F. Mussner (South Tyrol), B. Bär (Central Switzerland), I. Felipe (Tyrol) and leader iMONITRAF! R. Kistler (Central Switzerland)

Expert workshop for setting the iMONITRAF! agenda 2017-2018

Linked to the political roundtable was an expert workshop which took place on 2nd November in the morning. Workshop participants included representatives of the national level as well as experts from related networks, institutions and NGOs (Alpenkonvention, Alpeninitiative; EUSALP etc.). Also, representatives of the research community and the transport sector were invited.

The workshop focused on agenda setting for the next iMONITRAF! period 2017-2018. Overall, discussions during the workshop came to the following main conclusions:

- Activities in the next phase 2017-2018 should focus on implementation and action, the knowledge base only needs to be enlarged for very specific elements (e.g. exemptions for regional transport in the frame of Toll Plus). A special focus should be dedicated to lobbying/outreach activities, to gain further support for the implementation of Toll Plus.
- For the coordination with other networks and institutions the workshop has shown the strategy “march separately but fight together”. Thus, iMONITRAF! should not wait for the other networks with moving ahead but rather keep them informed and involved in the process.
- Harmonisation of measures remains a key objective of iMONITRAF!. It does however not mean that all measures need to be exactly the same but that they should lead to comparable effects.
- In the next phase, iMONITRAF! should focus on its strengths, its existing knowledge and its existing tools and methods.

Networking related to Toll Plus

Networking with other projects, institutions and stakeholders is a crucial activity of the iMONITRAF! Coordination Point. As activities in 2016 strongly focused on bringing the Toll Plus proposal to the political level, networking activities also concentrated on this issue:

- European level: In summer 2016, the European Commission has launched the review process of the Eurovignette Directive. A public consultation process was the first step of this review. The iMONITRAF! Coordination Point as well as several iMONITRAF! regions provided an answer to this consultation – which were strongly based on the existing factsheet on Toll Plus as well as the draft version of the political resolution.

- National and regional level: Through the cooperation with EUSALP, the regional proposal on Toll Plus was also shared with national decision makers as well as further Alpine regions. EUSALP AG 4 will pick up the activities of iMONITRAF! and will try to extend the iMONITRAF! analysis to further regions.
- Other stakeholders: Networking with other stakeholders included an exchange on the consultation process on the Eurovignette Directive. It became obvious that the ideas on Toll Plus will only be recognized in the revision process if many stakeholders bring forward this idea.

Networking related to EUSALP and to other projects and platform

At the beginning of 2016, activities of the macroregional strategy EUSALP were officially started at its Launch Conference in Brdo, Slovenia. Since then, the nine Action Groups of EUSALP defined their work focuses and specific activities. The Euregio Tyrol-South Tyrol-Trentino holds the lead of AG 4 “To promote inter-modality and interoperability in passenger and freight transport”, with Tyrol being the acting Lead Partner. Thus, a close cooperation between EUSALP AG 4 and iMONITRAF! could be secured and the discussions during the first meetings of the Action Group already show a considerable overlap with iMONITRAF! activities:

- During the Kick-off meeting of AG 4 in March 2016, three main topics were identified for future activities: 1) implementation of modal shift policies with a focus on toll systems, 2) infrastructure for sustainable transport and 3) interconnecting public transport services. Topic 1 with a focus on modal shift has a clear overlap with iMONITRAF! and offers the possibility to bring results of iMONITRAF! to the attention of further regions and to decision makers at national and European level.
- During the second and third meeting of the Actions Group, specific activities were presented and discussed with its Members. During these discussions, it became obvious that Toll Plus will also play a role in the frame of EUSALP. Also, further activities have a link to iMONITRAF!, e.g. the development of targets and indicators, for which iMONITRAF! can provide information on its experiences.
- Starting from 2017, Tyrol will also take over the role as Lead Partner of iMONITRAF!, that means that there will be a strong incentive for using synergies between the two networks and for using both their possibilities to full extent.

As in the previous years, iMONITRAF! has been in contact with other networks, NGOs and stakeholders, especially the Alpine Convention and the Suivi de Zurich process. Representatives of these organisations were also invited to the iMONITRAF! expert workshop which took place on 2nd November in Lucerne to ensure that synergies will also be used in the upcoming cooperation phase. In addition, the iMONITRAF! CoP as well as partners of the network take part in specific projects of the Alpine Space Programme. For example, the CoP as well as the Autonomous Provinces of Bolzano and Trento are observers to the project “Alpine Innovation for Combined Transport - AlpInnoCT”, which seeks to improve the efficiency and productivity of combined transport.

3 Monitoring of iMONITRAF indicators

This chapter provides the main findings from the data analysis of the individual indicators, which includes road traffic volumes, the transported tons and modal split, the concentration of nitrogen dioxide (NO₂) and particulate matter (PM₁₀), the exposure to noise, toll prices and prices of

fuel. To identify the distinct corridors more easily, it uses a consistent color scale: orange=Fréjus / Mont Cenis, red = Mont Blanc, blue = Gotthard, green = Brenner, violet = Tarvisio.

Indicator “Road traffic volumes”

Figure 2 analyses the **overall annual average daily traffic for all vehicles**, which is the sum of light and heavy vehicles circulating along the five iMONITRAF! corridors in the years 2005-2015. For Fréjus, Mont Blanc and Gotthard the data represents the respective measuring stations in the corridors’ tunnels⁵. For Brenner the data series stems from the station between Brennero/Brenner and Vipiteno/Sterzing (IT, highway A22). Finally, for Tarvisio, the data is taken from the station at Ugovizza (IT, highway A23).

With an average of 27,754 vehicles per day, the Brenner corridor confirms the highest traffic flows in 2015, followed by the Gotthard and the Tarvisio (17,695 and 11,114 vehicles per day, respectively). Both corridors between France and Italy are at the bottom with the lowest values: 5,131 vehicles per day for the Mont Blanc and 4,731 vehicles for the Fréjus.

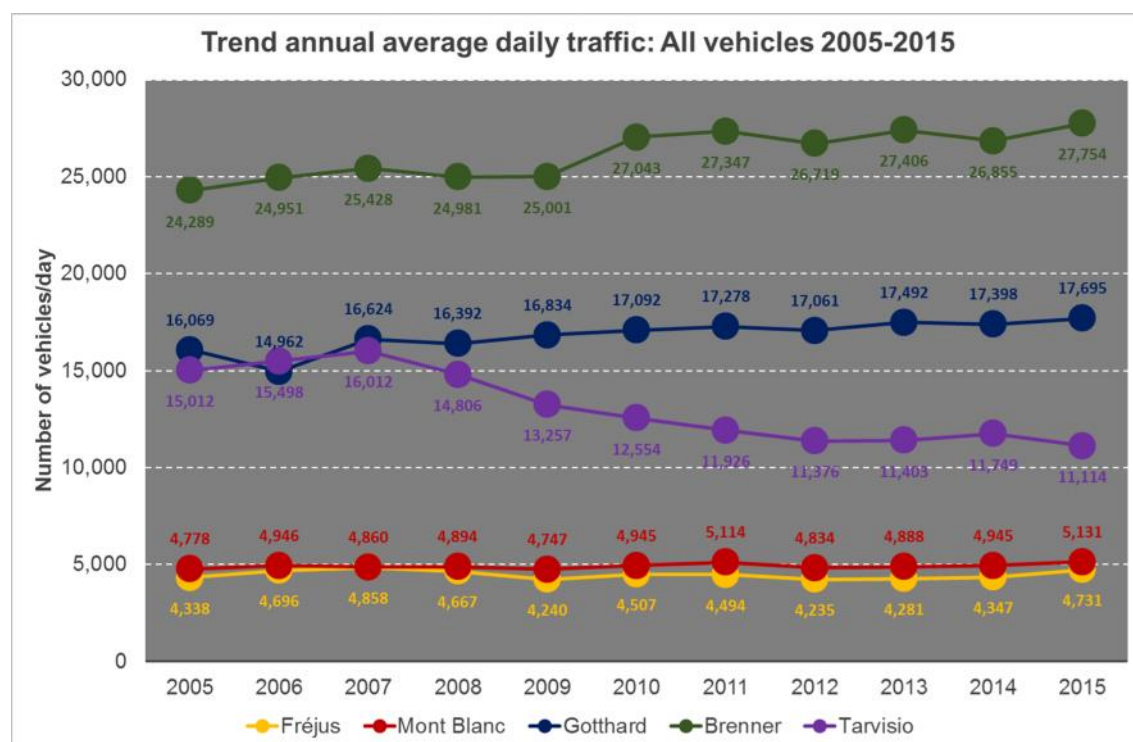


Figure 2: Annual average daily traffic: all vehicles (numbers 2016 are not yet available)

The analysis of the trend since 2005 shows distinct situations. The Gotthard and the Brenner axes are the two corridors with the highest absolute traffic volume. Referring to a time period of 10 years, both of them show an increase of flows (+14.2% at the Brenner, +10.1% at the Gotthard). In the short term (yearly variation), the year 2015 registered an increase by 3.3% at the Brenner and by 1.4% at the Gotthard compared to the year 2014. Also the volumes along

⁵ Data for Fréjus and Mont Blanc tunnels are taken from the official page of the Piedmont Region (http://www.regione.piemonte.it/trasporti/dati_valichi_alpini/index.htm). They have been updated also for the previous years, in order to make the data series consistent. For this reason, slight differences may occur if compared to previous reports.

the Mont Blanc and the Fréjus increased (+3.8% and +8.8%), reaching in both cases the highest levels of the last decade. On the other hand, the Tarvisio underwent a significant decrease, which is confirmed also for the year 2015 (-5.5% compared to 2014).

As far as the **annual average daily traffic of heavy vehicles**⁶ is concerned (Figure 3), the highest values are registered at the Brenner, where in 2015 about 8,900 heavy vehicles per day were counted on average (+3.5% in comparison to 2014). The Gotthard and the Tarvisio are following with about 4,000 and 3,500 heavy vehicles per day, respectively. Along these corridors different trends are visible: compared to the previous years, the flow is stable at the Gotthard and constantly decreasing at the Tarvisio (except for the year 2014). Finally, the values registered on the Fréjus and Mont Blanc highways are significantly lower: this reflects the restrictive measures and the comparably high toll prices on these axes (see indicator toll prices).

Several phases can be distinguished in the time series: between 2005 and 2007, heavy vehicle flows increased in all corridors. This development is followed by a decline until 2009, which reflects the impact of the economic crisis. The years 2009 and 2010 show some recovery, followed by another decrease in 2010-2013 (except for the Brenner, whose volumes continued to grow). In the years 2014 and 2015 a stabilization is visible along the Gotthard axis with less than 4,000 vehicles/day, while values along the French corridors are both increasing, reaching the levels of the year 2012. Finally, the Tarvisio shows fluctuating results, with a relevant increase in 2014, followed by a dramatic fall in 2015: with 3,464 vehicles/day, this represents the lowest value registered in the last 10 years for this corridor.

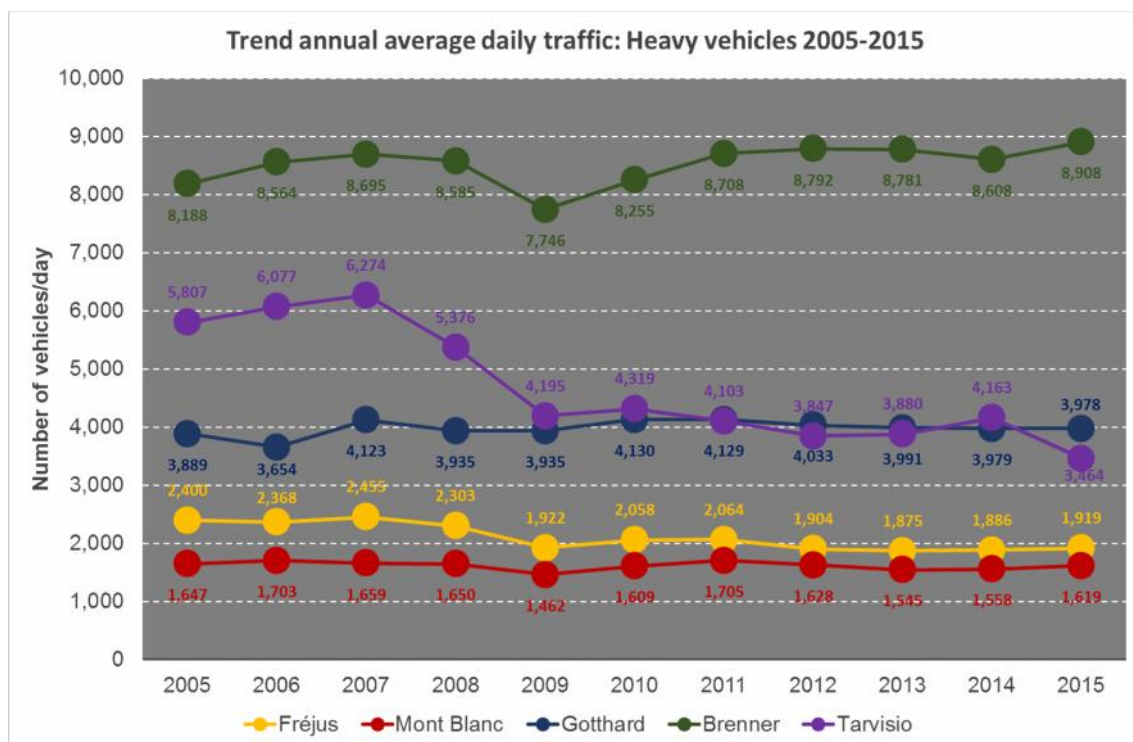


Figure 3: Annual average daily traffic: Heavy vehicles

⁶ „Heavy vehicles“ is the sum of heavy duty vehicles, light duty vehicles and coaches.

The analysis of the **annual average daily traffic for light vehicles**⁷ (Figure 4) indicates the highest values at the Brenner, with more than 18,800 vehicles per day in 2015. The Brenner is followed by the Gotthard (about 13,700 vehicles) and the Tarvisio (7,650 vehicles), while the numbers of the passes between France and Italy are the lowest of the iMONITRAF! corridors (about 3,500 for the Mont Blanc and 2,800 for the Fréjus).

The analysis of the development since the year 2005 depicts a moderate increase of light vehicle flows until 2011 (mostly evident along the Brenner corridor), followed by a decrease in 2012 and a new general growth in 2013. In this case, the decrease measured for heavy vehicles due to the economic crisis was not so evident. After the stabilization of the values registered in 2014 (except for the Brenner, characterized by a reduction of the flows), a general increase of the values is recognized for all corridors in 2015. In relative terms, the most important growth is detected at the Fréjus (+14%), followed by the Brenner and the Mont Blanc (about +3.5%). In absolute terms, the highest increase is registered along the Brenner, with an increase of about 600 light vehicles/day, followed by the Fréjus (+350 vehicles/day) and the Gotthard (+300 vehicles/day).

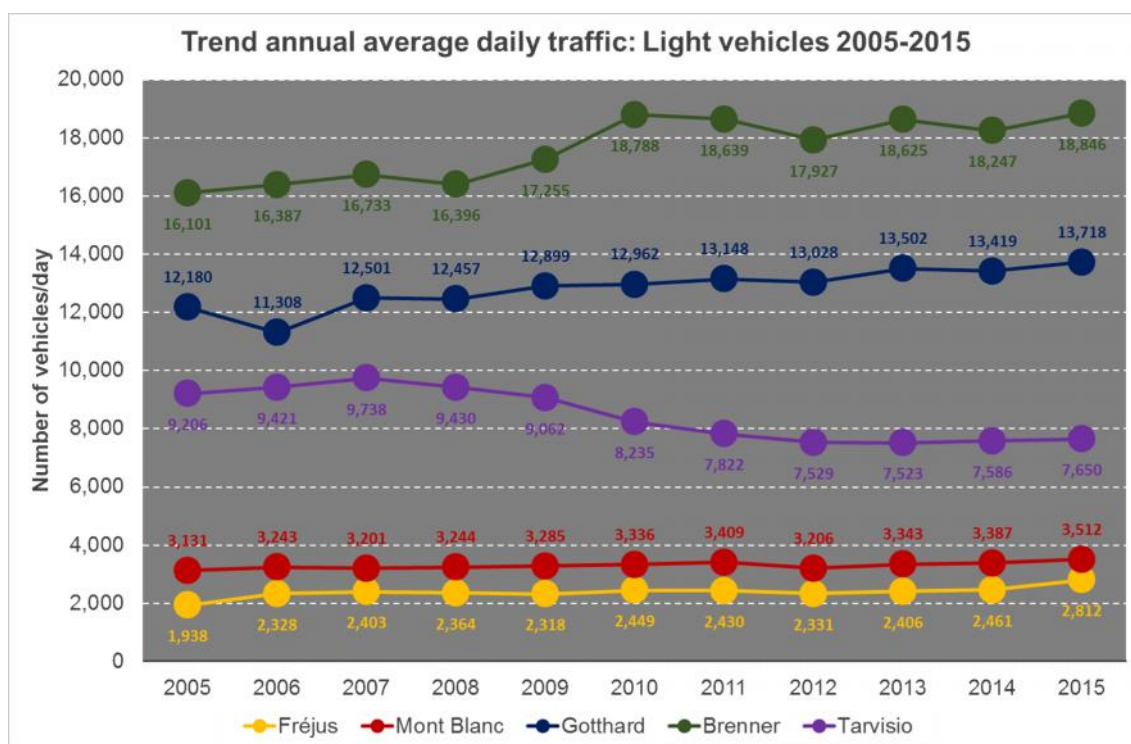


Figure 4: Annual average daily traffic: Light vehicles

Indicator Transalpine rail traffic flows

The analysis of the tons transported per year is largely affected by the difficulties in finding reliable new data: in 2015, for the Tarvisio, the Fréjus and the Mont Blanc corridors no updated values are available. However, compared to the previous report, data referred to the French corridors and referred to the year 2014 has been provided. In 2015, detailed information is available for the Gotthard and the Brenner corridors (Figure 5). At the Brenner an increase of the

⁷ „Light vehicles“ is the sum of motorcycles and passenger cars.

overall freight volumes from 42.6 Mt to 43.9 Mt in 2015 is detected; the increase involved both road transport (passing from 30.6 Mt to 31.2 Mt) and rail transport (from 12.0 Mt to 12.7 Mt). The trend at the Gotthard is inverse: here, the overall transported tons have decreased, passing from 24.8 Mt in 2014 to 24.2 Mt in 2015. This reduction is due both to the rail transport (from 15.6 Mt to 15.3 Mt) and to the road transport (from 9.2 Mt to 8.9 Mt). However, if the two other Alpine corridors in Switzerland (San Bernardino and Simplon) are taken into account, the sum of freight transport (road and rail) showed a growth by 1.2% from 2014 to 2015. This is caused by a significant increase of rail transport over Simplon, which overcompensates the decrease at Gotthard⁸.

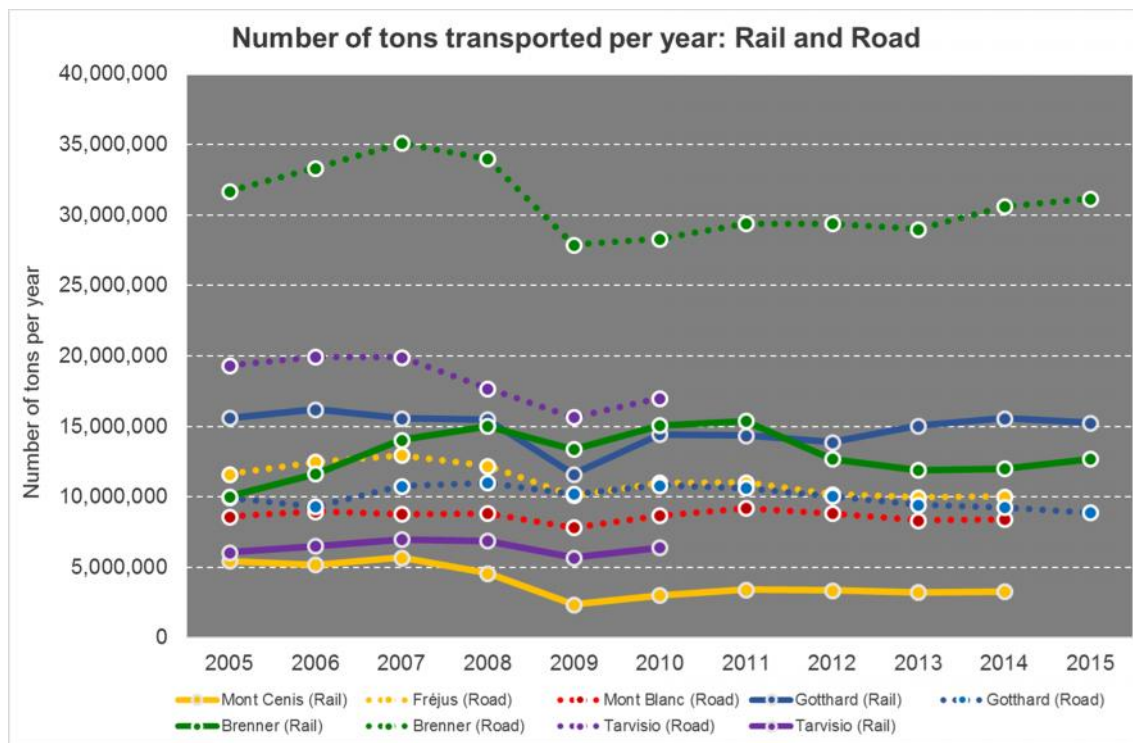


Figure 5: Transported tons per corridor

Referring to the modal split (Figure 6), with 63% the Gotthard is still the corridor with the highest share of rail, constantly increasing in the period 2009-2015. On the other hand, along the Brenner corridor rail transport had shown a decreasing trend since 2010, ending at 28% in 2014. In 2015 a slight increase is visible (from 28% to 29%). Referring to the Fréjus/Mt. Cenis, data of the year 2015 is not available. The values of the year 2014 (25% rail, 75% road) confirm the percentages registered in 2012 and 2013. Mont Blanc does not have a transalpine rail connection, therefore 100% of the freight is transported across the Alps on the road. Finally, no data has been available for the Tarvisio corridor after the year 2010.

⁸ <http://www.news.admin.ch/NSBSubscriber/message/attachments/43368.pdf>

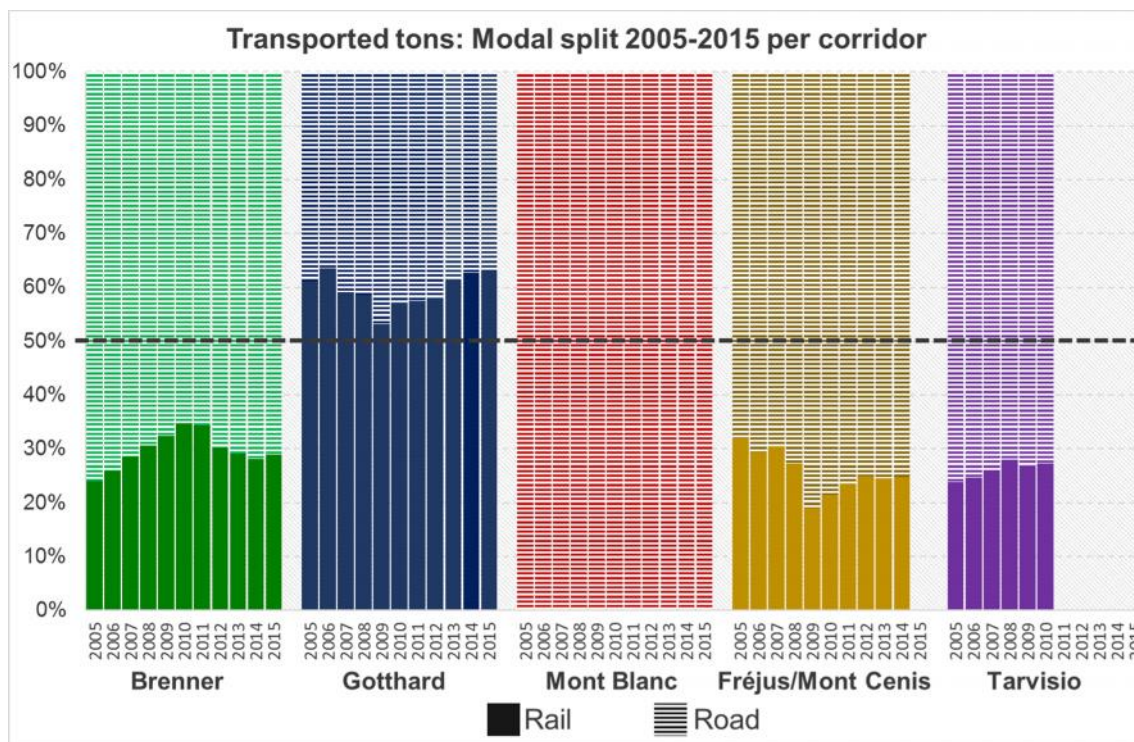


Figure 6: Transported tons, modal split per corridor

Indicator Air pollutant concentrations measured

Figure 7 illustrates the trend in annual average for **nitrogen dioxide (NO₂)** concentrations between 2005 and 2015 near the highways, since NO₂ is mainly related to road transport (and particularly to diesel vehicles).

A general increase of NO₂ concentration was registered at all measuring stations, except for Entreves (Mont Blanc corridor). This result is in contrast with the decreasing trend of NO₂ concentrations visible in the previous years. More in detail, the highest concentrations in 2015 are measured along the Brenner (green color scale), the Mont Blanc (red) and the Gotthard (blue) corridors, while lower values are visible along the Fréjus and the Tarvisio corridors (yellow and violet colors). These results are correlated to the road traffic volumes presented in Figures 1-3, but they includes other effects, as well: composition of vehicle fleet (share of vehicle categories, share of Euro classes) and meteorology. The warm temperatures and the scarcity of precipitations can contribute to explain the peaks registered in 2015 (it can also be seen for PM₁₀, see Figure 8).

The annual average values of NO₂ exceed the EU annual limit value of 40 µg/m³ for the French station Chamonix-Bossons (Mont Blanc) and for all monitoring stations of the Brenner corridor: Mutters, Ora/Auer, Vomp, Avio and Velturmo/Feldthurns. With 64 µg/m³, this station registered the highest values. Along the Gotthard axis, the stations of Moleno, Camignolo and Erstfeld exceed the Swiss and Austrian national annual limit of 30 µg/m³. Values are below the EU limit only in Entreves (Mont Blanc), Vallée de la Maurienne and Susa (Fréjus) and Tolmezzo (Tarvisio).

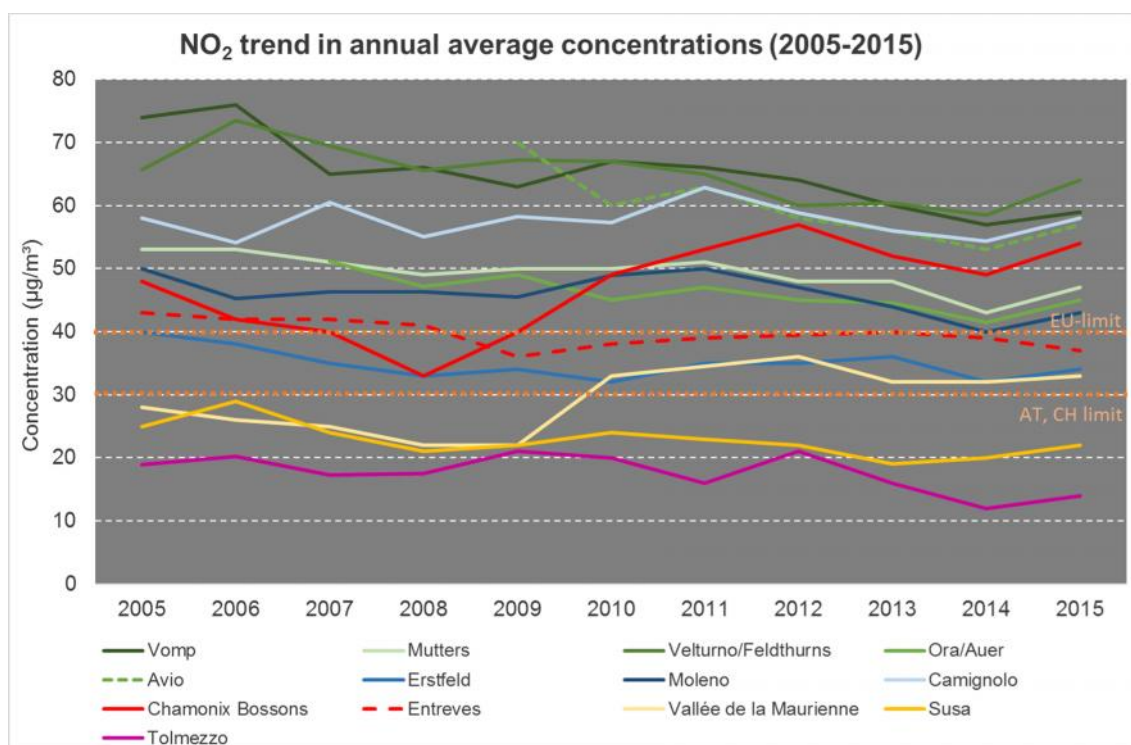


Figure 7: NO₂ trend in annual average concentrations⁹

Similar to the description of NO₂, the analysis of the **particulate matter (PM10)** concentration is restricted to the roadside stations. Compared to the year 2014, a general increase of the PM10 concentrations is visible, except for the station of Entreves (Mont Blanc). However, the EU limit value for the annual average (40 µg/m³) is not exceeded at any station. The highest values are registered at Avio, with 23 µg/m³. The annual limit value of Austria and Switzerland (20 µg/m³) is exceeded at Moleno (21 µg/m³) and is reached at Camignolo (both along the Gotthard corridor).

A time series analysis reveals a fluctuating trend of this indicator. After a significant decrease between 2005 and 2007, the concentrations remain overall more or less constant until 2010 (except for the large fluctuations at Chamonix Bossons). An increase is visible again in 2011, followed by three years of decrease, which were interrupted last year and led to values that were similar to those measured in 2013. The appearance of the similar increase of NO₂ and PM10 indicates that meteorology may have a significant influence on the measured values in 2015 (see paragraph above).

A couple of final caveats are necessary: first, PM10 concentrations are influenced by other sources than transport (such as wood heating installations); second, secondary PM10, built from precursor emissions (NO_x, SO₂, NH₃, VOC), can contribute to half of the concentration measured. Therefore, the fluctuations identified in Figure 8 may not only be explained by the development of the road transport emissions.

⁹ The value for the station Vallée de la Maurienne in 2011 represents the average 2010-2012; the value for Entreves in 2011 and 2012 represents the average 2010-2013.

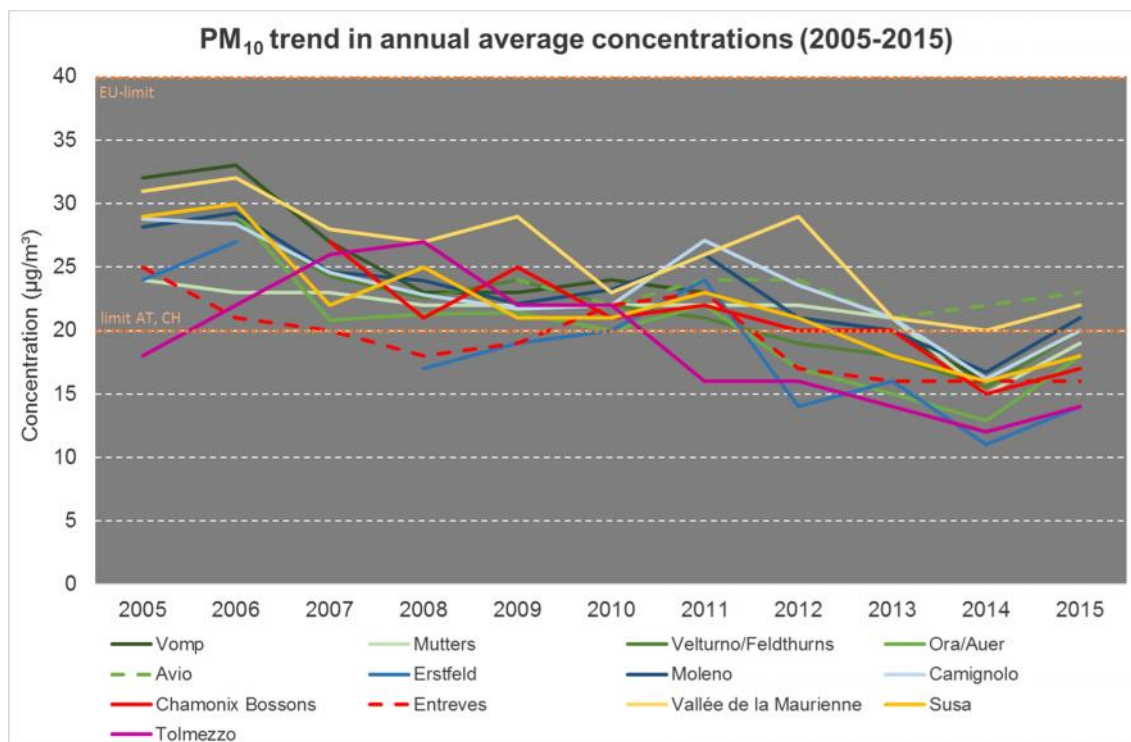


Figure 8: PM10 trend in annual average concentrations¹⁰

Indicator noise

Noise has been measured through the indicators L_{den} and L_{night} . The former defines the overall noise level during the day, evening and night and is used to describe the annoyance caused by exposure to noise. The latter is the indicator for the sound level during the night used to describe sleep disturbance. A comparison between the corridors is not adequate, because the distance of the microphones to the streets is not homogeneous. However, the variations along the individual corridors are consistent throughout the years.

The Gotthard and the Mont Blanc are the only corridors with continuous data collection for the period 2005-2015 (measuring stations of Camignolo, Reiden and Courmayeur), whereas noise is not monitored at the Brenner. Only partial data is available along the Tarvisio (Camporosso) and the Fréjus corridors (Bardonecchia): regarding the former station, data collection started in 2011 and is currently ongoing, while in Bardonecchia measurements started in 2011 and finished in 2014.

Figure 9 and Figure 10 show that L_{den} lies in the range between the 79.7 dB(A) (Reiden, Gotthard) and 73.3 dB(A) (Camporosso, Tarvisio) while L_{night} lies between the 72.1 dB(A) (Reiden) and 66.4 dB(A) (Châtillon, Mont Blanc). Increasing noise levels are recognized at Courmayeur and Châtillon (Mont Blanc) and Camporosso for L_{den} and L_{night} , whereas reductions were measured at Camignolo, along the Gotthard corridor. In 2015, L_{den} and L_{night} in Camignolo showed a further decrease by about 0.3 dB(A) and 0.5 dB(A) compared to 2014. This further reduction is part of a trend that started in 2013 with the installation of a new noise-reductive paving.

¹⁰ The value for Vallée de la Maurienne in 2011 represents the average of the years 2010 and 2012.

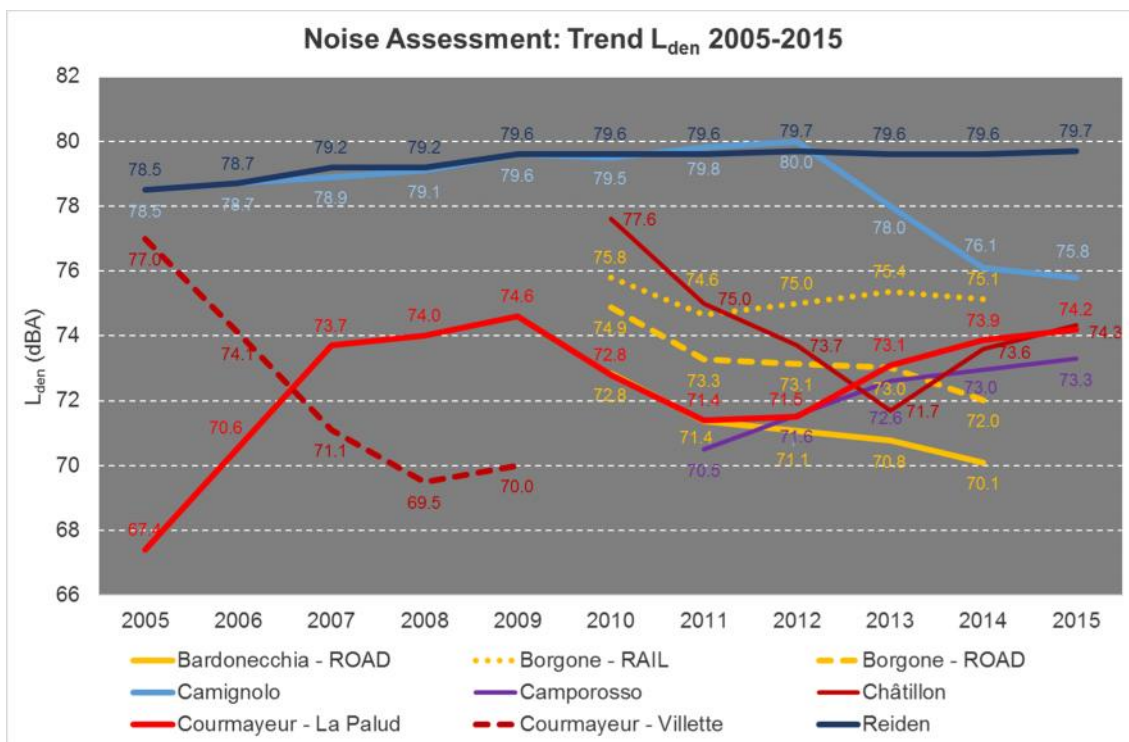


Figure 9: L_{den} trend¹¹

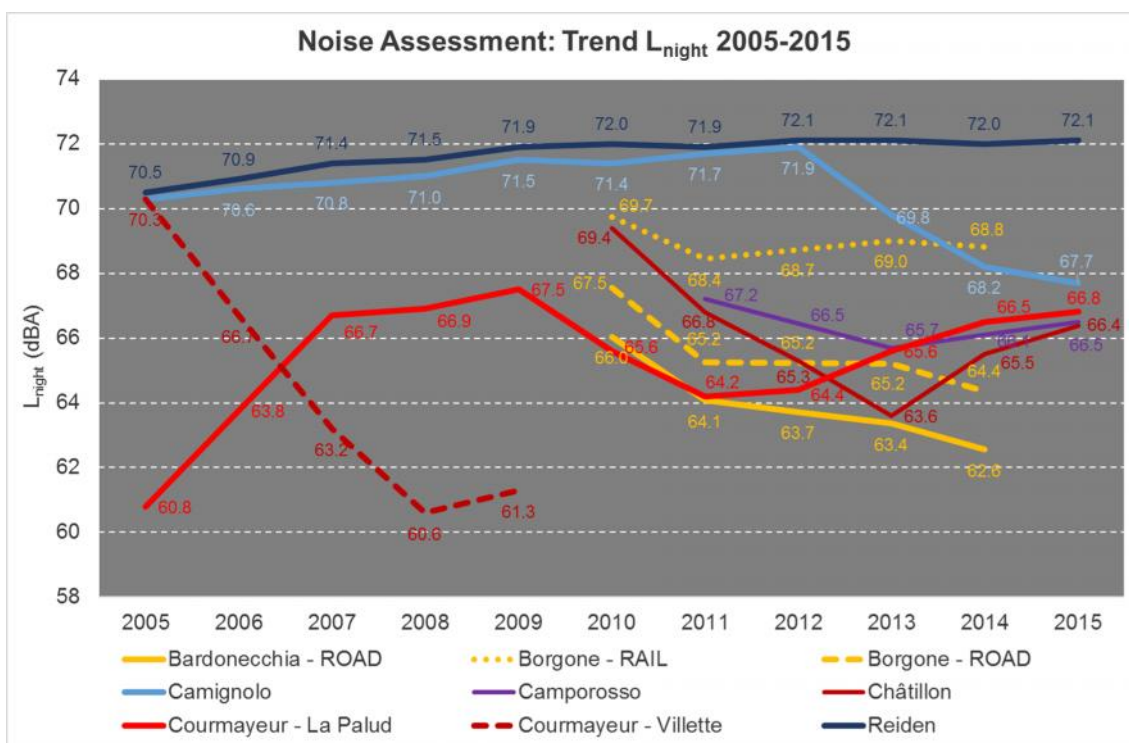


Figure 10: L_{night} trend¹²

¹¹ Data for Courmayeur – La Palud (year 2006), Bardonecchia and Camporosso (year 2012) is not available. The average value between the previous and the following year has been considered.

¹² Data for Courmayeur – La Palud (year 2006), Bardonecchia and Camporosso (year 2012) is not available. The average value between the previous and the following year has been considered.

Indicator Toll prices

Toll prices are calculated for specific alpine passage segments of the five iMONITRAF! corridors. The segments are as follows:

- Fréjus: from Aiton (FR) to Avigliana (IT) via Fréjus road tunnel (154 km)
- Mont Blanc: from Le Fayet (FR) to Pont Saint Martin (IT) via the Mont Blanc road tunnel (129 km)
- Gotthard: from Luzern (CH) to Chiasso (CH) via the Gotthard road tunnel (176 km)
- Brenner: from Kufstein (AT) to Affi (IT) via the Brenner pass (314 km)
- Tarvisio: from Gemona to Tarvisio (60 km)

The assessment is performed for the passage of a standard passenger car and three standard heavy duty vehicles of 5 axes and 40 t, with distinction between EURO-classes II, V and VI. The sums for the single alpine passages for the year 2015 are visualized in Figure 11.

The prices refer to the prices for a single passage. This holds for the Fréjus and Mont Blanc tunnels, the Austrian highway vignette and the separate Brenner highway toll on the A13 in Austria as well as for the Swiss highway toll (passenger cars). For these corridors return tickets and yearly subscriptions are also available, which would lower the overall cost for a single passage. For Switzerland only a yearly ticket is available, meaning that only the first passage costs €36.79 while all subsequent passage within the same year are free.

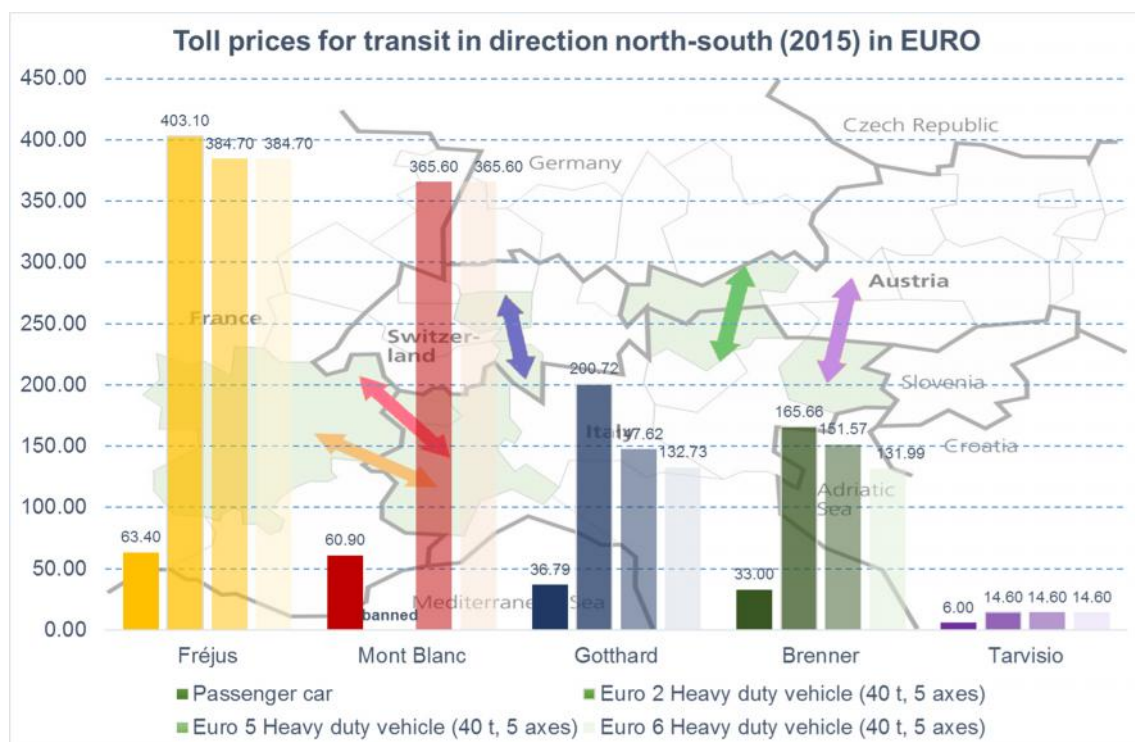


Figure 11: Toll Prices for a single transit on the iMONITRAF! corridors in direction North-South

For **passenger cars** the highest charges are applied for the Fréjus and Mont Blanc corridors. Here, apart from the highway tolls, the additional tunnel tolls are responsible for the high overall sum compared to the other corridors. It is also important to point out that the tunnel tolls on the Fréjus and the Mont Blanc differ according to the direction of travel, due to the different VAT applied: they are higher when travelling from Italy to France (€ 44.20 instead of € 43.50 for both

Fréjus and Mont Blanc). With € 36.79 and € 33.00, the charges for both the Gotthard and the Brenner are in the midrange of the iMONITRAF! corridors, while the cost for a passage on the Tarvisio is the lowest (€6.00) due to the relatively short distance of the considered road segment.

For **heavy duty vehicles**, road tolls follow the similar West-East-divide as for passenger cars. The corridors on the west (Fréjus and Mont Blanc) charge the highest tolls, while the Gotthard and the Brenner charge medium-ranged sums. The Tarvisio charges the lowest tolls for a passage. It is also the only corridor considered in our analysis, which has not yet applied a distinction of charges between single emission classes. A similar status also holds for the Italian part of the Brenner corridor (from Brenner/Brennero to Affi), whose toll is €37.20 for each EURO class. However, the Austrian system (Kufstein – Brenner/Brennero) introduces differences to the tolls according to the EURO classes (€128.46 for a EURO II HDV, €114.37 for a EURO V HDV and €94.79 for a EURO VI HDV), which explains the differences shown in Figure 11.

The biggest difference is visible at the Mont Blanc, where Euro II vehicles are not allowed to circulate. A further analogy for the situation of passenger cars is that the tunnel tolls on the Fréjus and the Mont Blanc also differ according to the direction of travel for heavy duty vehicles: due to the different VAT, the charge is higher when travelling from Italy to France (€322.50 compared to €317.30 for a EURO V or EURO VI truck for both Fréjus and Mont Blanc). Finally, along the Gotthard, a EURO V truck pays about 73% of the charge of a EURO II vehicle. This percentage further lowers to 66% when we compare EURO VI and EURO II trucks.

Note that the statements above show the absolute costs of selected trips. For logisticians the specific costs – the costs per vehicle kilometer – can be another important criterion for choosing the corridor and the traffic mode. This indicator shows that the order of corridors from highest to lowest costs remains the same as for the absolute costs: if we consider a heavy vehicle with Euro V technology and 40 tons, specific toll prices are €2.50/veh-km at Fréjus, €2.84/veh-km at Mont Blanc, €0.75/veh-km at Gotthard, €0.42/veh-km at Brenner and €0.24/veh-km at Tarvisio. The most significant difference is recognized between Gotthard and Brenner, which are relatively close to each other on the level of absolute costs in Figure 11 (the Gotthard is about 3% above the Brenner), but drift apart on the level of specific costs (the Gotthard is 74% above the Brenner).

A general feature of absolute and relative costs is that high tolls correlate with low traffic volumes and vice versa: recalling Figures 1, 2, 3 and Figure 11, the Fréjus and the Mont Blanc have the highest tolls and the lowest traffic volumes among the five iMONITRAF! corridors.

Indicator fuel price

The fuel prices are distinguished between diesel and petrol. The values shown in Figure 12 are the annual averages of the values officially registered in every country on four different dates (namely, on the 15th of January, May, July and October). Data is provided by ÖAMTC for Austria, the Federal Statistical Office for Switzerland, ISTAT for Italy and INSEE for France.

In comparison to 2005, an overall increase of prices happened in all countries, but with a significant fluctuation during the economic crises of 2008 and 2009. From 2009 onwards, there has been a strong increasing trend until 2012, followed by a decrease in all countries for the years 2013-2015. The decrease is particularly relevant in the last year (2014-2015) for Italy, France and Austria and it explained by the dramatic fall of the price of the crude oil. In Switzerland the decrease seems less marked (diesel) or even in countertrends (petrol). However, this result has to be interpreted by considering the unit of measure selected for our analysis (€) and the financial policies adopted by the Swiss National Bank, which in January 2015 decided to discontinue the minimum exchange rate of CHF 1.20 per Euro and to lower the interest rate. If the costs of

petrol and diesel in Switzerland were expressed in CHF, a trend would be visible, which is similar to those registered in the other EU countries and about 15% lower than in 2014.

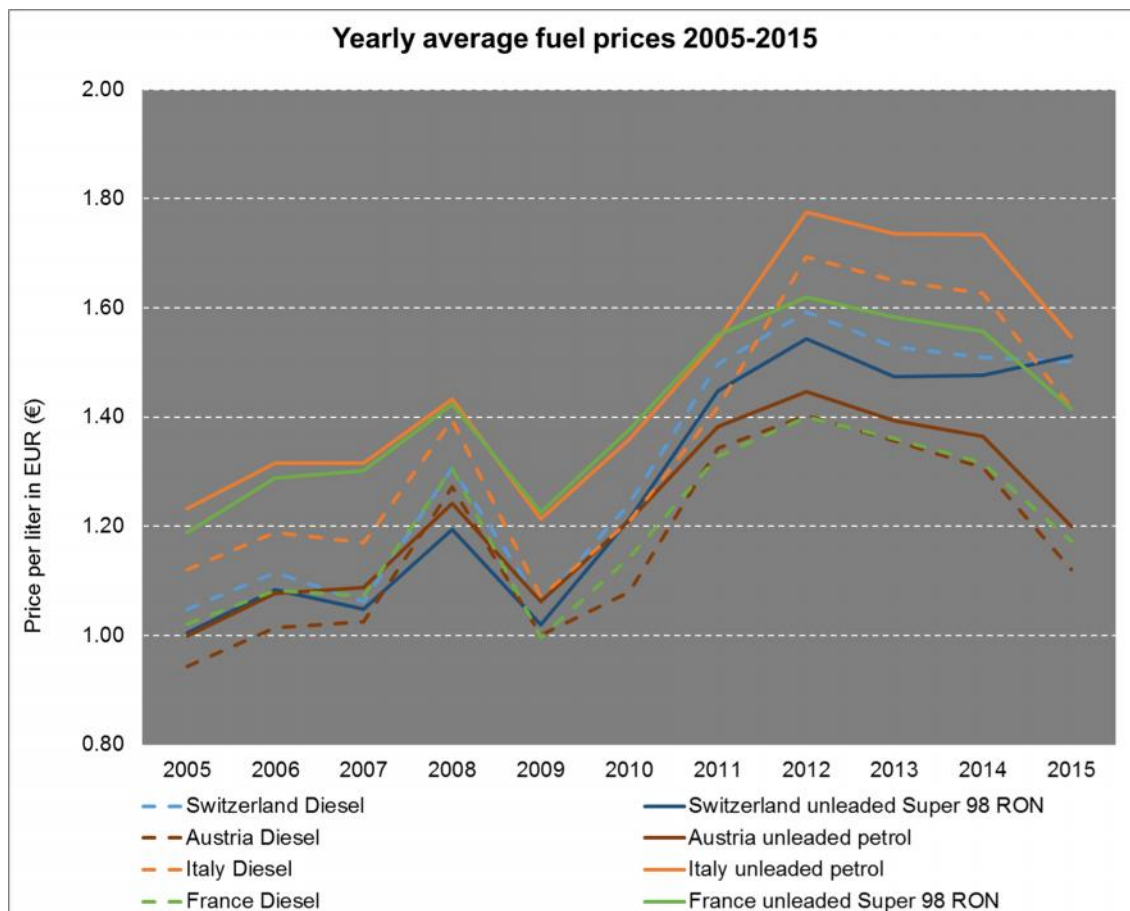


Figure 12: Annual average fuel prices

4 Moving ahead on regional and national level: Update on Best Practices

For the Annual Report 2016, iMONITRAF! partners have provided information on Best Practices in their region. Several important developments can be summarized for the year 2016, including an ambitious improvement of modal shift policy measures along the Brenner corridor as well as the opening of the Gotthard base tunnel which now provides the necessary “hardware” for the Swiss modal shift policy. Its operation will provide important insights for the other base tunnels and for designing an effective modal shift policy. Most policy measures mentioned in this period relate to pillar 3, however some developments can also be linked to pillar 2 and the regulatory measures. Especially, it needs to be mentioned that Tyrol came to an agreement with the European Commission to re-implement the sectoral driving ban and, in addition, several other regulatory measures shall be optimised along the Brenner to reduce air pollution. Also, some few

measures related to passenger transport were reported in 2016, focusing on infrastructure development and ticketing.

OVERVIEW: BEST PRACTICE UPDATE 2016

Policy Pillar	Name of measure	Country/region
Pillar 1: Monitoring, Information & awareness raising	New ordinance on provision of road traffic data	France
Pillar 2: Limiting negative impacts of Alpine transport	Re-implementation of sectoral driving ban	Tyrol
	Participation in LIFE project "BrennerLEC - Brenner Lower Emissions Corridor"	Autonomous Province of Bolzano and Autonomous Province of Trento
	Further construction of noise barriers	Autonomous Province of Bolzano, autonomous Province of Trento
Pillar 3: Modal Shift	Modal shift policy mix	
	Support measures for combined transport	Autonomous Province of Bolzano and Autonomous Province of Trento
	Provisions on ambitious toll system in new A22 concession contract and respective working group	Autonomous Province of Bolzano and Autonomous Province of Trento
	Revision of road toll system	Austria, Tyrol
	Modification of track pricing system	Switzerland
	Infrastructure	
	Opening Gotthard base tunnel and related package of measures	Switzerland
	Breakthrough of new Ceneri rail base tunnel (Gotthard axis)	Ticino, Switzerland
Pillar 4: Passenger transport	Electrification of the Val Venosta railway line	Bolzano
	Future extension of student ticket to the Euregio	Tyrol, Autonomous Province of Bolzano, autonomous Province of Trento
Pillar 5: Innovative approaches	Strong corridor cooperation along Brenner	Tyrol, Autonomous Province of Bolzano, autonomous Province of Trento

Table 1: Source: Compilation of the iMONITRAF! network

4.1 Overview on revised and new Best Practices

4.1.1 Pillar 1: Information, monitoring, awareness raising

Overall, monitoring campaigns are continued as in previous years and as summarized by the iMONITRAF! monitoring activities (see chapter 3).

An interesting approach to improve data availability and harmonisation has been taken forward in France. In July 2016, the French Ministry of Environment has introduced an ordinance on the issue of the communication of road traffic data by local authorities. According to the new ruling, every year, local authorities are required to transmit in electronic format data about the average annual daily traffic, including the percentage of HDV. The Government will publish them on the internet through an open standard, which may be easily used. The harmonization of road traffic monitoring system is an essential tool for road traffic management and security, but also to properly estimate air pollutants and gas emissions in order to establish a global diagnostic of the impact of road traffics on air quality, noise and the environment.

4.1.2 Pillar 2: Limiting impacts of Alpine transport

Pillar 2 includes command-and-control measures to limit negative impacts of transalpine freight transport as well as accompanying measures for modal shift. Especially along the Brenner corridor, the set of regulatory measures has been further optimized throughout 2016.

At the beginning of November 2016, **Tyrol re-implemented the sectoral driving ban** after a successful negotiation with the European Commission. The sectoral driving ban has the objective to shift 200,000 HGV per year from road to rail. At the beginning of this re-implementation, the sectoral driving ban will only be implemented for EURO classes 0-IV (HGV and tractor trailers with more than 7.5 tonnes maximum weight), EURO class V will be exempted until the end of April 2017 and EURO VI HGV remain exempted without any time limit. The sectors that are affected by the sectoral driving ban are the same as in the previous implementation phase: waste, stones, soil and spoil, log, wood, cork, non-ferrous metal and iron ore, motor vehicles and trailers, steel (with the exception of reinforcing- and construction steel for the supply of construction sites), marble and travertine as well as tiles.

As before, the sectoral driving ban includes exemptions for regional transport (with origin and destination of trips within a defined core area) as well as for pre- and on-carriages of combined transport services.

In order to improve air quality along the Brenner corridor, the **autonomous Province of Bolzano** as well as the **autonomous Province of Trento** with their two Environmental Protection Agencies participate in the LIFE European project “**BrennerLEC - Brenner Lower Emissions Corridor**”. The management of the traffic along the A22 highway and the dynamic reduction of the speed limit should guarantee a reduction of air pollution and noise emissions caused by passenger transport. Measures developed within this project are dynamic road capacity management reducing speed limits during saturated traffic conditions, dynamic speed limits management to be applied to light vehicles as a function of air quality conditions as well as dynamic integrated traffic management between highway and urban traffic, in close collaboration with the municipalities of Bolzano, Trento and Rovereto. On the motorway the speed limits introduced with this project are applied only for passenger and light traffic, as freight traffic already has the speed limit of 80 km/h.

To minimise noise impacts of freight transport, the **Autonomous Province of Bolzano** also signed an agreement with Rete Ferroviaria Italiana (RFI, the company of the Ferrovie dello

Stato Italiane Group with the public role of Infrastructure Manager) to finance with 8 million Euro the construction of **new noise-absorbing barriers** along the Brenner railway line. The autonomous Province of Trento, too, signed at the end of 2015 an agreement with Rete Ferroviaria Italiana (RFI) to finance with 6 Million Euro and realize until 2018 noise barriers in the City of Trento along the Brenner railway. The noise caused by freight and passenger trains can be thus reduced significantly.

4.1.3 Pillar 3: Modal shift

Pillar 3 focuses on modal shift measures, including both push and pull measures. It includes policy measures related to modal shift, with a special focus on developments related to the common measures of the iMONITRAF! strategy as well as infrastructure measures.

Policy-measures

Both the Autonomous Province of Bolzano and the Autonomous Province of Trento have taken steps for supporting combined rail transport. Currently, thanks to the Austrian contributions, ROLA services are only available until Brennersee (Austria) and these shall be extended to the Italian side of the Brenner corridor. The **autonomous Province of Bolzano** approved the funds (9 million euros in the next three years) to finance contributions and investments aimed at transferring the freight transport from road to rail. The expected result is a decrease of the number of HDVs along the Brenner highway and a contextual extension of the ROLA service also to the South Tyrolean railway line.

With the same objective, the **autonomous Province of Trento** has activated an **aid for integrated transport** that is not typically combined (the scheme was approved by the EU in April 2016) and provided resources to operators in the course of 2016, to the sum of 600,000 Euros. Furthermore the Province has at its disposal for incentives for combined transport, already notified to the European Commission, for the years 2017-2019, 3 Million Euros per year.

Also in **France**, a further support for rail transport services was implemented in October 2016. The French government decided to fix **railway track charges** at a level less than direct infrastructure costs and to subsidize the financing gap to the infrastructure operator SNCF (up to 90 Million Euro in 2016 and the following years).

Also, the **Autonomous Province of Bolzano** and the **Autonomous Province of Trento** have implemented the **new concession contract for the A22 Brenner highway**. This contract foresees the adoption of new measures that should increase the tolls for HDVs (Eurovignette). The Autonomous Province of Bolzano aims at using this “Plus” to encourage the modal shift from road to rail. In order to implement this new measure, a working group including Autostrada del Brennero Spa and the Autonomous Provinces of Bolzano and Trento has been implemented, with the aim of introducing a new toll system including a “Plus” as currently possible under the mark-up provisions of the Eurovignette Directive. Currently there are no operational applications of the Eurovignette in Italy and the intention is to put forward to the State a proposal to establish tariff levels differentiated into EURO emission classes and a revenue use for cross-financing, intermodal aid, noise barriers and noise reduction.

Switzerland modified its track pricing system. The new prices hold from 1st Jan. 2017. The prices for track-wearing are determined by a new algorithm leading to lower prices for freight and higher prices for passenger rail transport. In a popular vote, Switzerland agreed in 2016 to spend more money for the extension of the rail track system. The effect of both measures, together with the productivity increase due to the opening of the Gotthard base tunnel are supposed to increase the competitive position of the rail traffic on the Gotthard axis.

On all corridors, **toll levels** have seen no major changes in the year 2016. In Tyrol, toll levels had to be adjusted at the beginning of 2016 as a review of road tolls in Austria has shown that the previous toll levels exceeded road infrastructure and external costs (see Annual Report 2015 for further information). However, the overall road toll system has been reviewed in Austria in 2016 and with the beginning of 2017, a new toll system will enter into force which differentiates tolls into infrastructure and external costs (for further information see section 6.2). For the Brenner, this new toll system will increase tolls for EURO VI HGV but will at the same time reduce costs for older HGV (especially EURO 0-III).¹³ Overall, the differentiation of tolls and thus incentives for the modernization of the vehicle fleet are reduced under this new toll system. In this respect, the new toll system for Austria 2017 differs from the sectoral driving ban measures implemented by the Land of Tyrol in the frame of the air quality package IG-Luft. But at the same time, the increase of tolls for EURO VI HGV (which make up an increasing share in long-distance transport) supports modal shift by taking into account external costs

Infrastructure measures

In Switzerland, the Gotthard base tunnel was officially inaugurated at the beginning of June 2016 and taken into operation with the timetable change at the beginning of December. It now offers a maximum capacity for 260 freight trains and 65 passenger trains per day and reduces travel times considerably (e.g. one hour time saving on the distance Zurich-Milano). With the Gotthard base tunnel, the necessary “hardware” for a successful modal shift policy and for reaching the modal shift target of 650,000 HGV/year is now available. With the opening of the base tunnel, the Swiss Federal Council implements a package of measures which shall bridge the time until the full availability of the NEAT¹⁴ (Ceneri base tunnel, 4m corridor) and which shall set additional incentives for modal shift. This package of measures includes several regulations regarding access to the new infrastructure as well as track charges. Also, it includes several adjustments to the Swiss HGV fee which are implemented at the beginning of 2017 (new classification regarding EURO-classes). Concerning the Ceneri base tunnel, the breakthrough was achieved in 2016. This is an important milestone towards the full availability of the NEAT planned to open in 2020 (from then on, the whole Gotthard axis will provide a flat rail route through the Alps).

As already confirmed in the last Modal Shift Report of the Swiss Office of Transport (Verlagerungsbericht 2015), the effective shift from road to rail and the full capacity use of the base tunnel however requires additional policy efforts and, if necessary, an adjustment of the overall modal shift policy.

4.1.4 Pillar 4: Passenger transport

Both the autonomous Province of Bolzano and of Trento have taken measures to improve public transport services.

- Electrification of the Val Venosta railway line (from Merano to Malles). Works, which started in October 2016, are expected to last until the end of 2019.
- Agreement between Trento and RFI Company (Italian rail network) to improve the integration and interoperability of the local railway service, even by the use of new trains

¹³ This is due to the fact that external cost charges will not be applied on the Brenner motorway as this section is already charged through the mark-up factor and an overlap is not possible according to the Eurovignette Directive.

¹⁴ New Rail Link through the Alps (NRLA)

In the **Euroregion Tyrol-South Tyrol-Trentino**, public transport services shall be further improved. It was agreed at political level to extend the **student ticket** to the whole Euregio, so that student pass owners can use all public transport services in the Euregio. At the moment, negotiations are ongoing. The next step will be the implementation of the new public transport tariff system in Tyrol in spring 2017 which will provide the basis for further decisions.

4.1.5 Pillar 5: Innovative approaches

The regions along the Brenner corridor have strengthened their cooperation in the last year and have also taken over the lead function of the new EUSALP Action Group on Mobility. With their cooperation, they show a strong commitment to implement an ambitious and sustainable transport strategy. The Land of Tyrol, the Autonomous Province of Bolzano and the Autonomous Province of Trento all participate in a variety of organisations and networks that address related issues (such as BCP, EUSALP, Euregio, CAB/AGB). In this frame, the **Province of Trento** is developing analyses and studies, giving impulse to the monitoring and updating of available information on traffic and environment on the Brenner Corridor and is currently acting as President of the Brenner Action Community.

4.2 Best Practice Update in the light of previous recommendations and latest trends in transalpine traffic

Overall, the developments related to regional and national measures indicate a high commitment within the affected region to further limit transalpine transit volumes and their environmental impacts. Especially along the Brenner corridor, it became obvious that only a coordinated approach along the corridor can guarantee the necessary incentives for modal shift. For example, support measures for combined transport have now been extended to the Southern side of the Brenner to avoid unwanted environmental effects and to improve overall efficiency of the transport system. On the Gotthard corridor, the base tunnel was taken into operation in 2016 and, with the relevant infrastructure in place, it will now be the challenge to optimise the set of modal shift measures (push and pull) to guarantee a full usage of its capacities. Other corridors which are currently building new base tunnel infrastructures can learn from these experiences.

With a view on reaching the targets of the iMONITRAF! strategy and with implementing the recent resolution on Toll Plus, the following elements of the Best Practice Update 2016 have to be highlighted:

- Pillar 1: For controlling and reviewing achievements of existing modal shift policies, it is necessary to have a harmonised monitoring and a reliable data basis on traffic volumes and environmental impacts. Discussions in the frame of the iMONITRAF! expert workshop and the subsequent technical workshop showed that there are still some inconsistencies in regional and national data and that, for some regions, data on specific indicators is missing (see chapter 3). In this respect, the new French regulation on the mandatory and harmonised provision of local traffic data seems an interesting approach which could be transferred to other regions.
- Pillar 2: Especially along the Brenner corridor, air quality targets are still exceeded and all regions are struggling to implement effective regulatory measures to limit negative environmental impacts of transalpine transport. Again, it became clear that only a set of ambitious regulatory and incentive measures is sufficient for reaching a reduction of air

pollution. In a negotiation with the European Commission, Tyrol has even convinced EU decision makers that the re-implementation of the sectoral driving ban is now necessary as all steps related to “less-drastic” measures have been taken. To improve the coordination along the Brenner, the regions have also launched a project under the EU LIFE programme to transform the Brenner into a “low-emission corridor”.

- Pillar 3: With respect to pillar 3 and modal shift measures, several measures that support the development of a common modal shift policy need to be mentioned. Especially, the Italian regions on the Brenner corridor have implemented subsidy measures or least the relevant legal framework for combined transport and thus support the measures already in place in Tyrol. Overall, these measures set incentives for a stronger use of combined transport services as they improve the competitiveness of rail transport. And as long as the sectoral driving ban in Tyrol is in place, they also need to be seen in combination with this measure: they will set incentives to shift transport from road to rail on the overall Brenner corridor and not only on the Austrian side until the terminal in Brennersee. In Switzerland, the opening of the Gotthard base tunnel is a crucial milestone for the modal shift policy but it also became obvious that additional accompanying measures still need to be implemented in order to use the full capacity of the base tunnel and to reach modal shift targets.
- Pillars 4 and 5: Only few developments under pillars 4 and 5 have been reported by the iMONITRAF! regions for 2016. In general, it shows that the regions along the Brenner increase their cooperation not only on freight but also on passenger transport, especially through the Euregio where strategies and measures are being further harmonised (e.g. common student ticket for public transport).

5 Toll Plus as common instrument – core elements of the political resolution

The Annual Report 2015 included a summary of the in-depth analysis on Toll Plus which was conducted by the network through the year 2015 and which builds the basis for a political discussion. The in-depth analysis includes a proposal for an optimized scenario which was discussed, in a first step, during the political roundtable in Bolzano in November 2015. During this roundtable, political representatives gave clear support to move forward on Toll Plus and agreed to work towards a political resolution on this issue. During 2016, this political resolution was developed by the technical level and fine-tuned together with support of political representatives. Core elements for a Toll Plus system as well as next steps for implementation were agreed in the frame of the political resolution on Toll Plus. In addition, the resolution and the political discussion during the roundtable in Lucerne identify some needs for further investigations and in-depth studies regarding the effective applicability of the existing technical proposal.

Core elements of the resolution on Toll Plus

The regions agree that the following core elements shall be part of an ambitious Toll Plus approach. Considering different legal responsibilities, the regions will either take specific steps to implement these elements or will challenge the national level to support their implementation:

- The ‘Plus’ of the toll level shall be defined on the basis of additional costs in mountain areas (infrastructure cost, external cost, around +20 €/ct/km at Gotthard, Mont Blanc and Fréjus corridors, +25 €/ct/km at Brenner corridor). These toll levels can be imple-

mented in a step-wise approach, considering regional characteristics and avoiding disproportionate economic impacts. During the roundtable discussion in Lucerne, the regions agreed that *“the application of increased charges may take place gradually, also through equivalent public compensatory measures, at least until alternative forms of transport are made available, respecting the characteristics and needs of the various regions and different mobility models, with respect for the principle of the free market and competition and avoiding disproportionate economic repercussions”*.¹⁵

- Toll Plus should serve as a mechanism to harmonise toll levels across the iMONITRAF! corridors to allow a fair distribution of traffic volumes. Concurrently with the implementation of Toll Plus, the existing different national toll rates along the alpine corridors should be approximated.
- Toll differentiation must consider future developments beyond today's EURO-norms such as differentiation according to specific CO₂ emissions.
- To avoid negative economic impacts in the Alpine regions, special provisions for regional transport will be necessary, considering the size of trucks and distance.
- Revenues should be invested in rail infrastructures or should be used for specific environmental and intermodal projects to accelerate the improvement of rail quality and capacity or provide incentives for rail freight transport as compensatory measure. An appropriate share of revenues of about 30% to 50% shall be allocated to the regions along the transit corridors.

Implementation of Toll Plus

The implementation of these elements however requires a revision of the Eurovignette Directive and must be in line with the bilateral land transport agreement between Switzerland and the EU. The Alpine regions thus call upon the European Commission and the European Parliament to consider the proposed adjustments in the ongoing revision process.

Further, the Alpine regions call upon the Suivi de Zurich Process and the national level to fully adopt the existing and, after the revision, potentially new provisions of the Eurovignette Directive.

During the political roundtable and the expert workshop on 2nd November 2016 in Lucerne (see chapter 2), iMONITRAF! partners agreed to concentrate their forces in the upcoming years on bringing forward implementation of Toll Plus. In 2017, a broad set of lobbying and networking activities will be launched, based on a lobbying strategy to be developed in spring 2017. These activities will be aimed at a range of stakeholders, including not only policy and decision makers at regional, national and EU level but also multipliers as well as other NGOs, associations and networks which could become potential partners for building an alliance for Toll Plus implementation.

Integrating Toll Plus in the set of common measures

An ambitious Toll Plus system supports the existing set of measures. In order to optimise the overall set of common measures, the Alpine regions propose the following integration of Toll Plus in the existing set of measures at regional and national level:

- Night-driving bans and bans for high-emitting HGV shall remain valid, the latter shall be periodically adjusted to the state of the art to remain effective.

¹⁵ See Annex to the political resolution on Toll Plus, provided by the autonomous Province of Trento.

- Incentives for freight shift from road to rail support the aims of a Toll Plus system. They are a short-time approach until Toll Plus is fully implemented. South Tyrol and Trentino foresee the implementation of incentives at the regional level, while national measures are already implemented in Austria, France as well as in Switzerland.
- For Tyrol, the sectoral driving ban is seen as intermediate measure and can be dropped when a better European framework or a better solution along the corridor for guaranteeing the modal shift of long-distance freight transport from road to rail with a similar effect is available. An ambitious Toll Plus System is seen as an appropriate instrument.
- The implementation of future steering instruments (such as an Alpine Crossing exchange) remains a long-term objective. The time horizon must be coordinated with the opening of the railway base tunnels (Ceneri, Brenner, Mont Cenis) and the full availability of their capacities. The timeframe 2030 as stated in the iMONITRAF strategy of 2012 remains appropriate.

Next steps on Toll Plus in the frame of iMONITRAF!

As agreed during the political roundtable on 2nd November 2016, iMONITRAF! will further focus its activities on the implementation of Toll Plus. Specifically, the following next steps are foreseen:

- Development and implementation of a lobbying strategy to make sure that the regional proposal on Toll Plus is brought to the attention of relevant decision makers, potential alliance partners as well as the media.
- Some specific elements of Toll Plus need to be further analysed, especially an in-depth analysis on regional transport is foreseen.
- Regarding networking, the coordination with EUSALP shall be strengthened as EUSALP will also include a work focus on Toll Plus. In addition, it will be important to link to the study of the Suivi de Zurich which will be started at the beginning of 2017 and which will consider different elements for an in-depth analysis.

6 Trends for transport and environmental policies on national and EU levels

6.1 Relevant developments on EU level

Update on Connecting Europe Facility

The second call for proposals of the Connecting Europe Facility has attracted 427 projects although funding was only 7.5 billions €, 6.5 of which was earmarked for cohesion countries. On 17th of June, the Commission put forward a list of 195 transport projects that will receive 6.7 billion € of EU funding. The Lyon urban node was allocated 7.7 millions € for a 20 millions € total investment including studies and works. The Lyon urban node has been pre-identified as a major bottleneck for both North Sea – Mediterranean Corridor and Algeciras-Budapest Mediterranean Corridor; the increase of its capacity includes short-term works for 2019 and long-term works matching with Lyon-Turin base tunnel opening in 2030.

On 13th of October, the European Commission launched the third round of calls for proposals under the CEF for transport, making 1.9 billion available, including 1.1 billion earmarked for co-

hesion countries. For the first time, a specific priority (provided for with € 110 million) addresses smaller cross-border projects, located on the comprehensive network, which shall help bringing regions closer together and enhancing their accessibility. Applicants have until 7 February 2017 to submit their proposals. The outcome of the calls will be published by summer 2017.

As a consequence of Connecting Europe Facility success, the Commission, represented by DG MOVE is already planning to renew this financial instrument after 2020 and will support this proposal as discussions about next European budget framework should start by the end of 2017. The DG Move is willing to promote ambitious proposals such as an increase in the Community co-financing rate or the possibility for developed regions to finance rail infrastructures through INTERREG programs.

European Commission is pushing forward de-carbonated transports

In July 2016, the European Commission published its strategy for low-emission mobility, setting clear guiding principles to Member States to prepare for the future. The low-emission mobility strategy frames the initiatives that the Commission is planning in the coming years and maps in which it is exploring options: increasing the efficiency of the transport system, speeding up the deployment of low-emission alternative energy for transport, moving towards zero-emission vehicles. Cities and local authorities are considered as crucial for the delivery of this strategy.

The Commission is stepping up action on lorries, coaches and buses, which currently represent around a quarter of road transport carbon dioxide emissions. On the opposite of other parts of the world, such as the U.S.A., China, Japan and Canada, EU has neither required fuel efficiency standards, nor a system to monitor carbon dioxide emissions for lorries, buses and coaches. The Commission is launching a public consultation which primarily focuses on monitoring and reporting of emissions, but also seeks first feedback on standards which Violetta Bulc would like to implement before the end of her term as European Commissioner for transport in 2019.

Finally, the low-emission mobility Strategy reiterates Europe's commitment in pursuing global efforts to control emissions from international aviation and maritime transport. On April 13th, the unanimity of European Parliament groups has adopted a resolution addressed to the States Transport Ministers with particular mention to the fact that there was no reason any more to exempt the maritime and air transport sectors from Climate policy joint endeavor.

Review of Eurovignette Directive

The European Commission has launched the consultation of Directive 1999/62/EC ("Eurovignette") on the charging of heavy goods vehicles for the use of certain roads. The consultation period started 8th July 2016 and ended 2nd Oct. 2016. The Eurovignette Directive has already been amended twice, in 2006 and 2011. Following an ex-post evaluation of the current legislative framework which revealed persisting problems in the area of road infrastructure charging, the Commission intends to revise the Directive in order to promote fair and efficient road charging.

The 4th Railway Package is entering into force

In light of the European Commission's aim to create a deeper internal market and to make the rail sector more competitive, proposals for a 4th Railway Package were adopted in January 2013. This package is composed out of six legislative proposals, a technical and a market (structural) pillar and it aims at completing the single European rail area by removing respective barriers so that competitiveness, growth and innovation in domestic passenger markets are enhanced. It therefore covers the issues of rail governance, market opening for domestic passen-

ger rail transport, competitive tendering for Public Service Obligations contracts and a new role for the European Railway Agency. At the end of this reform package higher levels of safety, interoperability and reliability in the European rail network should be reached.

In this context the Commission had adopted on 7th April 2016, new rules for accessing rail infrastructure. These rules aim at unblocking rail infrastructure from framework agreements with dominant operators that have often close ties with infrastructure managers. The new rules create fairer conditions for new train services for obtaining access to important lines. In a next step, the text of the technical pillar of the 4th Railway Package was published. Respective technical provisions entered into force on 15th June; the Single European Rail Area being one step closer to completion. The European Railway Agency (ERA) can now streamline the large number of national technical rules and therefore develop an improved safety culture in Europe. After a three year transition period, the ERA will be empowered to issue single EU-wide certificates for rolling stock and railway undertakings. This will significantly cut administrative costs for companies, as they previously had to get authorisation in each Member State of operation. The market pillar of the 4th Railway Package was finally adopted on 14th of December. After five years of negotiation, the measures that will open competition in domestic rail passenger markets, improving the impartiality of infrastructure managers and strengthening national rail regulators entered into force. This Parliamentary vote completed the reform of European railways. In addition, the Commission released on 8th of December a report on the development of the rail market that analyses the impacts of EU legislation on rail (focus on freight operations and passenger markets). Findings include that EU legislation has led to a more efficient and customer-responsive industry. In Member States where rail markets are opened, competition can result overall in lower fares for customers and better value for taxpayers.

Adoption of the new National Emissions Ceilings Directive (NECD)

On 14th December the European Parliament and the Council have signed into law the new National Emissions Ceilings Directive (NECD), based on a Commission proposal that sets stricter limits on the five main pollutants in Europe. It will enter into force on 31st December 2016. Once fully implemented, the Directive aims at reducing almost 50% of the negative health impacts of air pollution, such as respiratory diseases and premature death, by 2030. Besides higher air quality also substantial benefits for the quality of fresh water, soil, and ecosystems will be obtained and harmful particles causing climate change like black carbon will be fought. The Directive is the central element of the Commission's more comprehensive Clean Air Programme for Europe. Member States must transpose the Directive into national legislation by the end of June 2018 and produce a National Air Pollution Control Programme by 2019 setting out measures to ensure that emissions of the five main air pollutants are reduced by the percentages agreed by 2020 and 2030. Member States must also coordinate the NEC with strategies and programmes in fields such as transport, agriculture, energy and climate. The Commission plans to work together with the Member States to ensure sound implementation, for example by setting up a new Clean Air Forum by autumn 2017. This will bring together stakeholders to exchange experience and good practice. In addition, the Commission also plans to facilitate access to EU funding instruments in this context.

6.2 Developments at national level

In **Austria**, the overall **road toll system for HGV** has been reviewed in 2016 and a new system has been approved by the Government in summer 2016, a new tariff regulation was published in September 2016. As of 2017, the toll system is no longer based on a bonus-malus system dif-

ferentiated for different EURO classes but rather implements the external cost pricing approach. A basic infrastructure tariff is implemented which only differentiates into two groups: EURO VI and EURO 0-EEV. In addition, an external cost charge for air quality and noise is implemented which is differentiated into four different emission groups. On the Lower Inn valley and the Brenner, the mark-up will still be implemented on the infrastructure costs but according to the regulations of the Eurovignette Directive, it is not possible to implement the external cost charge in addition to this mark-up. Thus as a result, the differentiation of toll rates for EURO classes will, at the Brenner corridor, be reduced under the new toll system: EURO VI HGV have to pay higher tolls as compared to 2016 while older HGV (EEV, EURO 0-V) see a toll-reduction under the new system (compare table 2).

Tolls on the Austrian side of the Brenner corridor

in €		2017		comparison: 2016		change 2016-2017 in %	
		EURO IV	EURO VI	EURO IV	EURO VI	EURO IV	EURO VI
A 12 motorway "Unterinntal" with 25% mark-up	Kiefersfelden-Innsbruck Ambras (74,8 km)	35,50	34,10	37,31	30,84		
A13 Brenner motorway with mark-up 25% (daytime)	Innsbruck Ambras - Brenner (35 km)	44,61	43,38	45,73	37,86		
Total tolls on Brenner corridor		80,11	77,48	83,04	68,70	-4%	13%

Table 2: Source: ASFINAG

Opening of the Gotthard base tunnel

The New Rail Link through the Alps (NRLA) is an enormous achievement for Switzerland. Three new base tunnels through the Alps and an upgrading of the access routes are included. They shall bring the north and south of the country and the European countries closer together. The Lötschberg base tunnel has been in operation since 2007, and the Gotthard base tunnel was opened and entered into service in June 2016. At 57 km long it is the world's longest rail tunnel. In 2020 the NRLA will be complete when the Ceneri base tunnel with a length of 15 km will finally enter into service. Journey times between the north and south will then be reduced by up to one hour for passengers. For freight transport the flat link increases its environmental assessment.

The Gotthard road tunnel with a length of 17 km was opened in 1980. Between 2020 and 2025 it must be fully renovated and will then be closed for any transports. To keep the transit route open, a second road tunnel will be built near-by. In a national referendum, Swiss citizens confirmed the project in February 2016.

Ratification process of Paris Agreement

For further developing the iMONITRAF! target system, it is also necessary to consider the implementation process of the Paris Climate Change Agreement in the relevant countries. At the current state, France, Austria and Italy have ratified the Paris Agreement, Switzerland not yet as a full revision of the CO2 law is required.

France seems to be the country that has pushed implementation forward the most strongly. It implemented the Energy Transition for Green Growth Act and a decree regarding renewable energy development objectives. Besides, France has focused on consolidating the various initiatives that were formed during COP21 among businesses, unions, associations and of course

States. Examples are the International Solar Alliance, the launch of the initiative against the erosion of the West African coastline, the implementation of the road map for the global coalition for sustainable construction and the adoption of an initial list of projects for the 'Renewable Energy in Africa' initiative. In addition, France also aims at being the first country that issues state green bonds and sets a carbon price floor for electricity. In **Austria** the focus of the implementation of the Paris Agreement is on the implementation of the EU's INDCs including a reduction of greenhouse gas emissions by at least 40% relative to 1990 levels by 2030. This is supposed to be reached by 2030 through a reform of the EU-ETS as well as through new targets for member states beyond the EU-ETS (so-called "Effort-Sharing"). **Italy** has not published implementation plans yet but the Italian Minister for Environment said with regard to the Paris Agreement that "[...] the challenge is now to translate words into reality." Switzerland sees itself as well-prepared for ratifying and implementing the Paris Agreement. In February 2015 it has submitted a preliminary emission reduction target for beyond 2020 at the UN Climate Secretariat and announced to reduce its carbon emissions by 2030 by at least 50% relative to 1990 levels (deducting also foreign emission reductions). The ratification of the Paris Agreement in Switzerland requires a full revision of the CO₂ law which will be launched in summer 2017.

7 Outlook 2017-2018: A new phase for iMONITRAF! with a focus on implementation of the Toll Plus proposal

On 2nd November, political representatives of five partner regions (plus one observer) have agreed to continue the iMONITRAF! cooperation for two more years and have signed a partnership agreement which includes first ideas on further activities for iMONITRAF!. The political roundtable was supported by an expert workshop to receive further feedbacks on potential activities of the iMONITRAF! network in the phase 2017-2018 (see chapter 2). During the technical workshop on 3rd November, the activities for the next phase were also discussed and some major work focuses were agreed. This final chapter of the Annual Report provides a short overview on the major fields for action as they are currently perceived by the iMONITRAF! group.

Implementation of the iMONITRAF! proposal on Toll Plus

Over the last three years, iMONITRAF! has developed an in-depth knowledge base on Toll Plus and, with the political resolution, has the political mandate to work towards implementation of the specific proposals. However, most of the Alpine regions do not have the relevant legal responsibilities for adjusting HGV pricing systems. In addition, the current legal framework on EU level with the Eurovignette Directive as well as the national framework in Switzerland which is guided by the bilateral transport agreement only leave little flexibility.¹⁶

A strong lobbying process will thus be necessary to convince the relevant decision makers at national and EU level of the need for Toll Plus and to adjust the relevant frameworks. iMONITRAF! agreed to put one major work focus on lobbying, networking and communication on Toll Plus with the aim to integrate the regional proposal into the current decision making process. In a first step, a detailed lobbying and implementation strategy needs to be developed by the Coordination Point with the help of all iMONITRAF! partners. This strategy will include a description of the relevant target groups, the relevant activities to reach each target group as well as an

¹⁶ For a more detailed description of the relevant legal frameworks on EU and national level as well as their limitations, please refer to the in-depth report on Toll Plus, chapter 2.
[<http://www.imonitraf.org/DesktopModules/ViewDocument.aspx?DocumentID=HhZQtOV4zel=>]

overview on relevant material to support the lobbying activities. Based on this strategy, different activities will be launched starting from early summer 2017.

Further specifying the proposal on Toll Plus

The regional proposal on Toll Plus (in-depth analysis 2015) only provides some first information on how to handle regional transport in the frame of Toll Plus. This aspect needs to be further specified as it has been identified as weak point within the iMONITRAF! proposal. During the expert workshop on 2nd November 2016, discussions showed the ambivalent character of the current proposal: it seems difficult to call for an ambitious implementation of Toll Plus without providing a specific solution on how to deal with regional transport and with regional impacts that could come along with its implementation.

A further in-depth analysis is thus required which provides different specific proposals/scenarios on how to integrate regional transport in a Toll Plus system. In a first step, this will require a specific definition of regional transport (including perimeter). Then, different mechanisms to include regional transport in the frame of Toll Plus and for limiting negative economic impacts for regional transport (and transport-intensive industries) have to be explored. If possible, the analysis should include a legal examination to provide a sound and applicable solution. This in-depth analysis will be developed until autumn 2017 so that results can be integrated in the final tasks of the lobbying/networking activities.

Cross-check of monitoring system, target system and DPSIR

As a third work focus, the iMONITRAF! group will have to cross-check its common monitoring system as well as the target system and the DPSIR approach. Over the last Coordination Point period, some difficulties with indicators of the monitoring system became visible and it will be necessary to check for better solutions. This includes the indicators “traffic volumes HGV and passenger vehicles” as, again, some inconsistencies between the regions with definitions of vehicle types emerged. In addition, the indicator toll prices needs to be cross-checked so that it is in line with the activities related to Toll Plus.

As additional activity related to monitoring, the target system of iMONITRAF! needs to be cross-checked. The targets were set by each region/corridor as input to the iMONITRAF! strategy 2012. Since then, several target systems on national and EU level have re-adjusted – especially the target system related to climate change. It thus needs to be checked if the target system shall be updated. If this is the case, the follow-up question arises, if the DPSIR approach should be updated too.

Continuation of knowledge-base and networking activities

In addition, the Coordination Point will continue all activities related to strengthening and updating the knowledge-base on transalpine transport. This includes the annual update on Best Practices which is supported by inputs from each partner region and enables an important exchange function. Also, the activities will include updates on recent trends and developments at national and EU level, so that all iMONITRAF! partners are aware relevant decision making processes.

As in the previous years, iMONITRAF! will also be active in networking with other relevant stakeholders, institutions and networks. Especially, it will be necessary to strengthen the exchange with the Suivi de Zurich and the Alpine Convention, as there are close overlaps with the activities of these groups. Also, the networking with EUSALP will be strengthened as the working group mobility of EUSALP has identified several activities related to modal shift and pricing so that synergies between the two groups need to be optimized.