iMONITRAF!

Annual Report 2024

Strengthening the common instrument mix for Modal Shift on the Alpine corridors

Giving a common voice to the Alpine transit corridors

iMONITRAF! continues to unite the Alpine regions along the major transit corridors to address the pressing challenges of transalpine traffic. Since its inception under the Alpine Space Programme in 2005, iMONITRAF! has evolved into a pivotal platform for developing coordinated and effective transport strategies. Through its collaborative activities, iMONITRAF! fosters exchange between policy makers and technical experts to devise and implement joint solutons.
The network's strength lies in its ability to act as the unified voice of the alpine regions, advocating for sustainable transport solutions at national, macroregional and European level. By bringing together key stakeholders, iMONITRAF! not only addresses environmental and social impacts but also drives forward joint policy initiatives that ensure the long-term sustainability of transalpine transport.

Main success factors of iMONITRAF!

iMONITRAF! has become a recognized partner, both as a scientific and political knowledge hub. It provides significant value not only to it's members, but to all participating regions by providing:

- **Joint data basis:** the common monitoring system provides comparable data for all Alpine corridors. 10 indicators are represented for a 20 year timeseries.
- **Political strategy and policy scenarios:** keeping at heart the needs of the alpine regions.
- **Common voice at EU & national level:** Successful networking activities on EU and national level.
- **Networking activities:** bringing together insights from the broader Alpine transport community.

Spotlights: Combined Transport and Rail Efficiency

Each year, iMONITRAF! puts its energies on selected work focuses with high relevance for the cooperation. In 2024, these spotlights were:

- **Combined Transport (CT):** In light of the ongoing revision of the EU CT Directive, iMONITRAF! developed a joint typology on measures to effectively support CT. A discussion paper includes recommendations for decision makers at EU level, ensuring that the new toolbox of the CT Directive considers lessons learned in the Alpine regions (see last page).
- **Rail Efficiency:** As additional modal shift efforts depend on available and attractive rail capacities, iMONITRAF! has further investigated options and ongoing windows-of-opportunity to improve rail efficiency and to optimize capacity management.

iMONITRAF! Partnership and cooperation area

The iMONITRAF! networks involves seven partner regions and observers along the major transit corridors.

Corridors

- Ventimiglia
- Fréjus/Mont Cenis
- Mont Blanc
- Simplon
- Gotthard
- San Bernardino
- Brenner
- Tarviso/Tauern
- Other TEN-T sections

Partner Regions

Central Switzerland
Tyrol
South Tyrol
Trentino

Observer Regions

Provence-Alpes-Côte d'Azur
Ticino
Bavaria

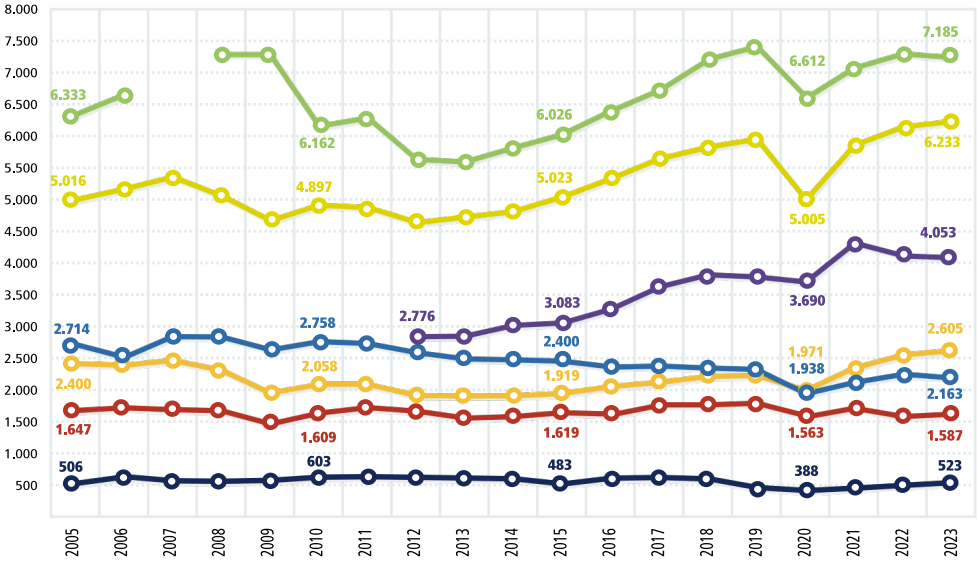
Pressures are growing: Increase in traffic numbers

Overall traffic on the seven main transalpine (road) corridors →

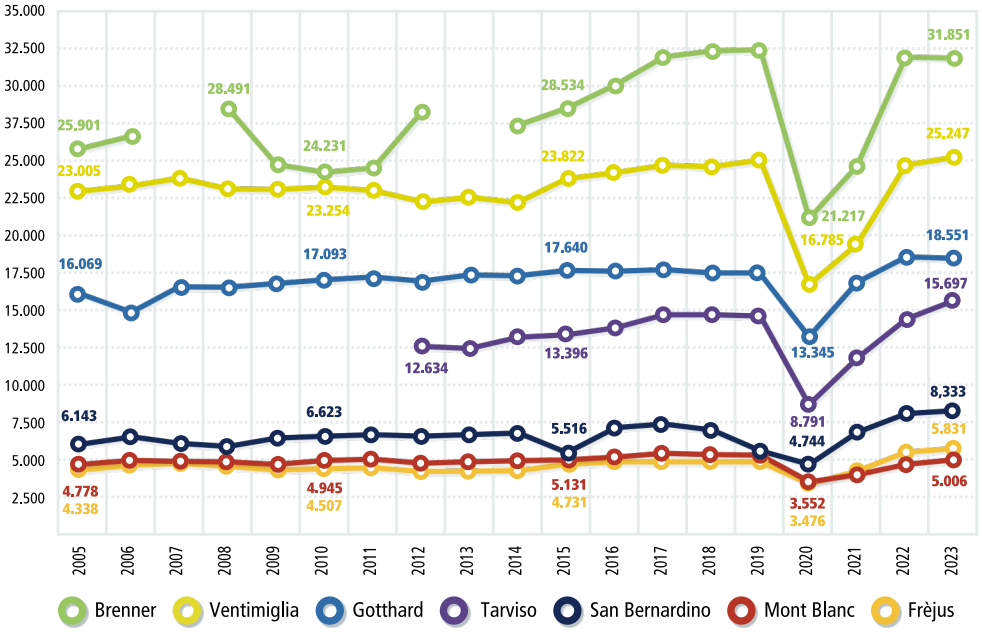
The overall number of vehicles crossing the main transalpine corridors is THE key indicator in the iMONITRAF! monitoring system as it can be understood as one of the main drivers influencing environmental and social impacts. Looking at the trend of total passenger and freight transport on the right-hand side, the following insights can be summarized:

- **2023 values slightly exceed pre-Covid levels:** In 2023, 110,500 vehicles cross the seven major Alpine road transit corridors on average per day, approx. 5% more than in 2019 – the last year before the Covid-19 pandemic. Compared to 2022, Tarvisio registers an increase by 8%, while the other corridors are generally stable.
- **No major changes regarding corridor distribution:** Compared to the previous years, the distribution of traffic flows between the corridors remains similar. With 31,850 vehicles/day, the Brenner corridor presents the highest traffic flows by far (ca 29% of the total), followed by Ventimiglia and Gotthard.

Trend annual average daily traffic: heavy vehicles 2005 – 2023



Number of vehicles/day



← Stabilisation of freight transport volumes on high level

In 2023, the aggregated number of heavy vehicles (HV) crossing all iMONITRAF! corridors sums up to ca 24,400 HV/day. This is almost the same figure reached in 2022. Two main aspects deserve to be highlighted:

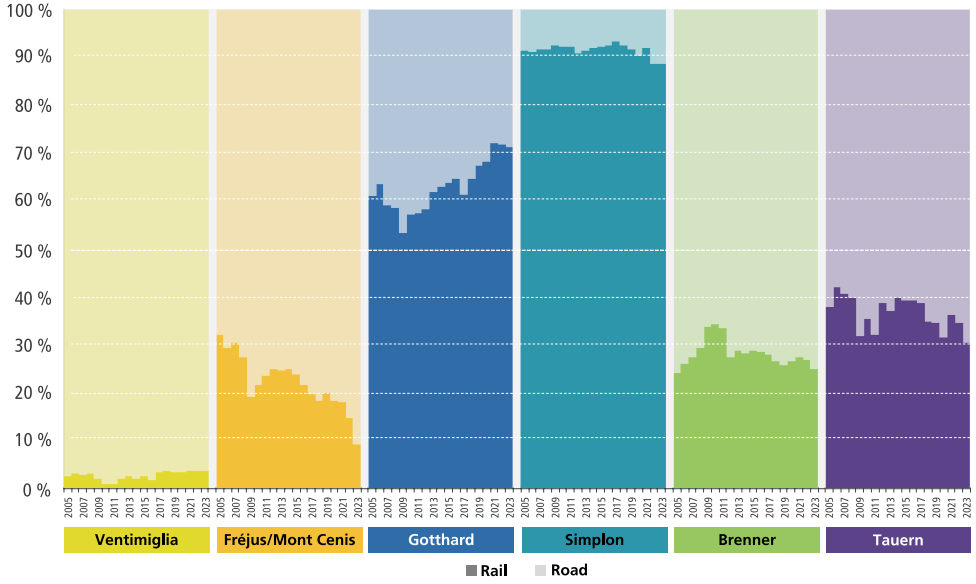
- **High pressure remains on the Brenner:** As for light vehicles, Brenner registers the highest flows: ca 7,200 HV/day, which corresponds to ca 29% of the total flows across all corridors. Ventimiglia and Tarvisio follow closely, with an average of ca 6,200 and 4,100 HV/day.
- **Different trends across the single corridors:** Gotthard, Brenner and Tarvisio register a slight decrease of flows in 2023 compared to 2022: ca -3%, -2% and -1%, respectively. The other four corridors register minor increases in the range of +1 to +3% (except for San Bernardino: +12%, but with very low absolute flows).

Modal split is missing new dynamics

Implementing the main rationale of iMONITRAF! needs new efforts

Modal shift is the leading rationale of the iMONITRAF! strategy and the combined scenario. The common policy pathway of 2021 suggests an instrument mix to set additional incentives for shifting from road to rail. Yet, the modal split road-rail has not changed much over the last years or has even seen a development into the unwanted direction. The strong modal shift efforts of the last years and the effects of the new NEAT infrastructures is visible on the Swiss corridors Gotthard and Simplon. On the Gotthard, the rail modal split mirrors the development of the relevant infra-structures with the new base tunnel opened in 2016 and the fully functioning 4m-corridor at the end of 2020 giving an additional boost. On the other corridors, large infrastructures are still under construction and will be necessary to reinforce the impacts of ongoing modal shift policies.

Transported tons: Modal split 2005-2023 per corridor



Main insights on modal split 2023

- **Modal shift efforts visible on the Swiss corridors:** As in the previous years, only the two Swiss corridors out of the six offering both rail and road transport exceed the share of 50% for rail transport: Simplon (89%) and Gotthard (71%). Rail share remains much lower on the other corridors: Tauern (30%), Brenner (25%), Mont Cenis (9%), and Ventimiglia (4%).

- **No positive dynamics:** Compared to 2022, a decrease (or stabilisation) of rail shares is visible for all the corridors. Simplon and Ventimiglia maintain the same share as in 2022: 89% and 4%, respectively. Rail share along the Gotthard decreases slightly from 72% to 71%. Brenner, Tauern and Mont Cenis register the most negative changes: -2%, -4%, and -6%, respectively.

- **Continuing trends:** For Tauern and Mont Cenis in particular, this trend is in line with that one of 2022, when rail shares slightly decreased compared to 2021. Variations at Mont Cenis must be interpreted carefully, by considering the impacts of a rockslide of August 2023.

Take-home messages

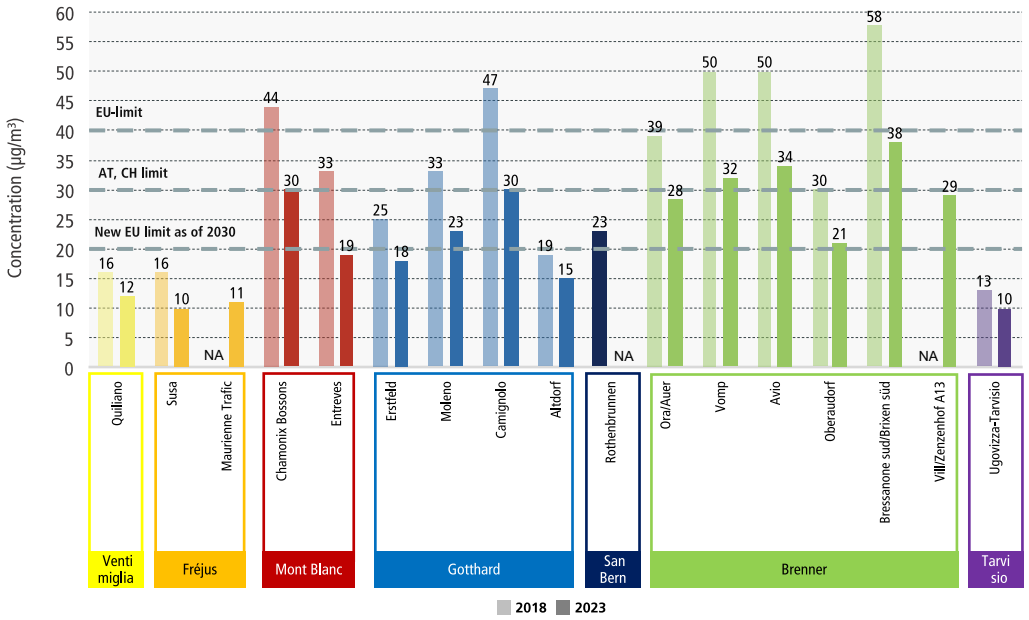
- Despite a comprehensive instrument mix, rail share has even seen a decrease on several corridors in 2023.
- This reflects remaining competitive disadvantages of rail freight and highlights the need for further action.
- Improved capacity management will play an important role to ensure high-quality and attractive rail services. This is especially crucial on the Brenner to reach effects even before the opening of the Brenner Base Tunnel.

Air quality should not be neglected

Improvements over the last years but need to reflect on new air quality limits

Reducing environmental impacts of transalpine freight transport lies at the core of **iMONITRAF!** activities since its launch in 2005. Reaching European and national air quality limits has been a specific challenge for the regions along the transit corridors, as exceedances of those limits are a threat to the health of citizens and environment. Thanks to new vehicle technologies (Euro standards) and efforts of the Alpine regions to incentivize the use of modern heavy vehicles on their corridors, air quality has improved considerably over the last years.
Based on new scientific evidence on health risks of air pollutants, the EU revised its Air Quality Directive, requiring a new evaluation of need for action.

NO_2 trend in annual average concentrations (2018 vs 2023)



Main insights on environmental indicators

- **Nitrogen dioxide - NO_2:** In 2023, no monitoring station along the **iMONITRAF!** corridors reports an exceedance of the EU limit of 40 µg/m³. After 2022, this is the second year that this is the case.

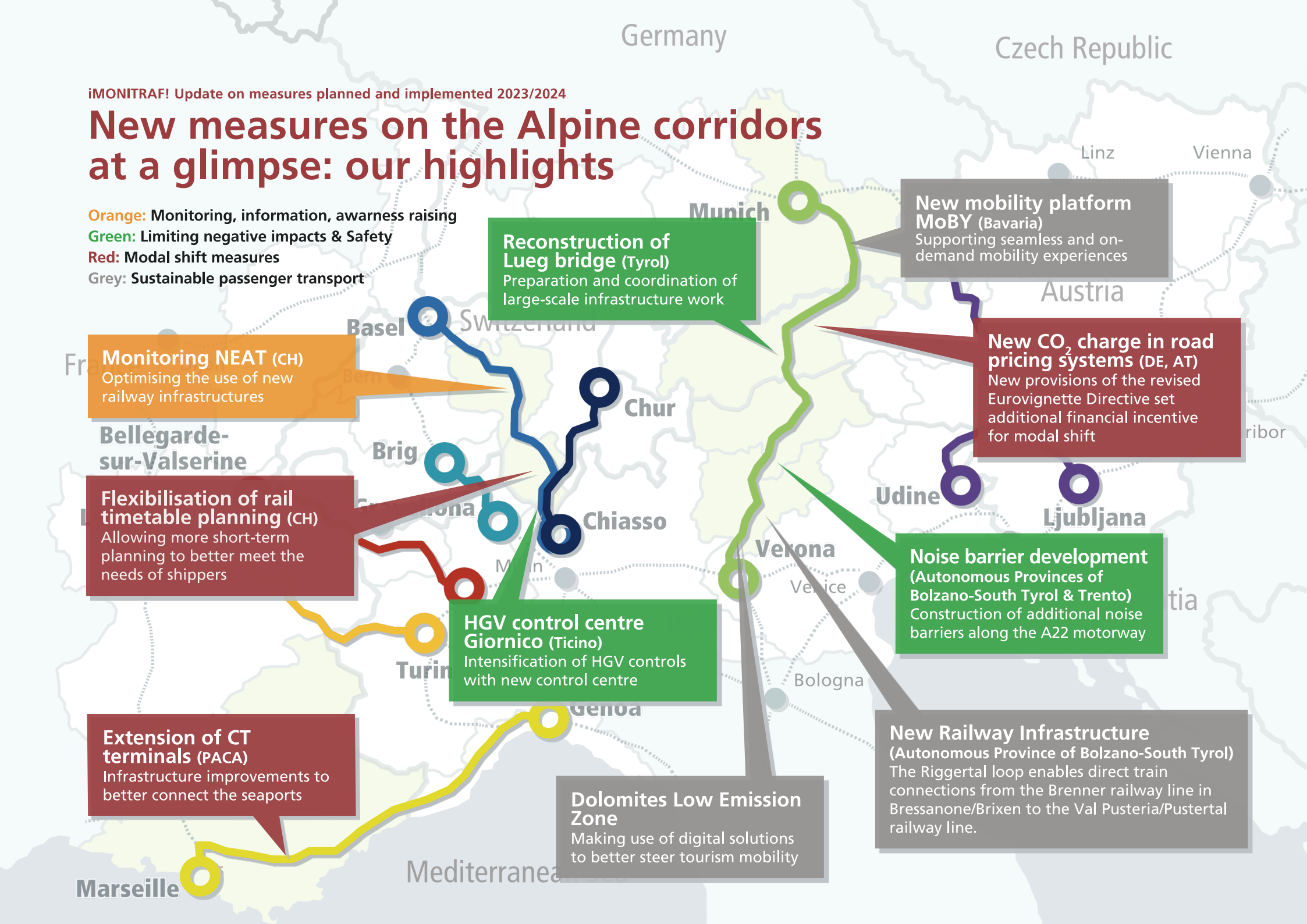
- **Particulate matter - PM_{10}:** In 2023, the highest PM_{10} concentrations are registered at three Brenner monitoring stations: Avio, Ora/Auer, and Bressanone sud/Brixen Süd; as well as at one Ventimiglia station. Nevertheless, no station reaches or exceeds the EU limit of 40 µg/m³ or the national limit of 20 µg/m³ set in Switzerland and Austria.

- **New air quality limits:** With the revised Air Quality Directive, annual limit values for the pollutants with the highest documented impact on human health, $PM_{2.5}$ and NO_2, are reduced from 25 µg/m³ to 10 µg/m³ and from 40 µg/m³ to 20 µg/m³, respectively. In 2023, nine monitoring stations still exceed the revised threshold value of 20 µg/m³ for NO_2.

- **Noise:** Also noise levels register a decrease in 2023 compared to 2022 in three out of five stations, while being stable in the other two. The highest noise levels are still measured along the Gotthard.

Take-home messages

- Despite positive trends over the last years and the milestone that EU air quality limits are met, the **iMONITRAF!** regions need to step up their efforts to meet the new European legislation.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Bellegarde-sur-Valserine
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Ljubljana
Verona
Bologna
Genoa
Marseille
Mediterranean
iMONITRAF! Update on measures planned and implemented 2023/2024
New measures on the Alpine corridors at a glimpse: our highlights
Orange: Monitoring, information, awarness raising
Green: Limiting negative impacts & Safety
Red: Modal shift measures
Grey: Sustainable passenger transport
Reconstruction of Lueg bridge (Tyrol)
Preparation and coordination of large-scale infrastructure work
New mobility platform MoBY (Bavaria)
Supporting seamless and on-demand mobility experiences
Monitoring NEAT (CH)
Optimising the use of new railway infrastructures
New CO_2 charge in road pricing systems (DE, AT)
New provisions of the revised Eurovignette Directive set additional financial incentive for modal shift
Flexibilisation of rail timetable planning (CH)
Allowing more short-term planning to better meet the needs of shippers
Noise barrier development (Autonomous Provinces of Bolzano-South Tyrol & Trento)
Construction of additional noise barriers along the A22 motorway
HGV control centre Giornico (Ticino)
Intensification of HGV controls with new control centre
Extension of CT terminals (PACA)
Infrastructure improvements to better connect the seaports
Dolomites Low Emission Zone
Making use of digital solutions to better steer tourism mobility
New Railway Infrastructure (Autonomous Province of Bolzano-South Tyrol)
The Riggertal loop enables direct train connections from the Brenner railway line in Bressanone/Brixen to the Val Pusteria/Pustertal railway line.

Main insights per iMONITRAF! policy pillar

Pillar 1: Monitoring, Information & awareness raising

- Monitoring remains a cornerstone in the policy mix. Campaigns are continued and strengthened, e.g. with additional monitoring stations (fixed noise monitoring station on Brenner railway line since 2023, Autonomous Province of Bolzano-South Tyrol).
- Monitoring efforts are extended to infrastructure use to optimize capacity planning. Insights from "Monitoring NEAT" will be interesting also for other corridors.

Main insights and further need for action:

- Monitoring insights regarding infrastructure use could be better used at the level of **iMONITRAF!**, e.g. through a coordinated data exchange.
- Infrastructure work and maintenance needs to be closely coordinated along the corridors, also looking at effects on neighbouring corridors.

Pillar 2: Limiting negative impacts of Alpine transport & Safety

- The instrument of HGV controls is further developed both along the Gotthard and Brenner, new infrastructures support these efforts.
- To limit the impacts of both road and railway noise, additional noise barriers are constructed along the Brenner corridor.
- Lueg bridge (Tyrol): flexible traffic management to maintain traffic flows as best as possible during the renovation work.

Main insights and further need for action:

- HGV controls become more relevant, knowledge exchange between the corridors allows optimization – to ensure safety for all road users.
- Safety of infrastructure and necessary repair work becomes an increasing concern, however leading to new coordination challenges.

Pillar 3: Modal shift

- The Alpine regions have taken new steps towards an ambitious road pricing. New provisions of the Eurovignette are implemented in DE and AT, CH increases its HGV fee in 2025 to compensate for inflation.
- The uptake of CT solutions is further motivated through i) new infrastructures (e.g. in PACA with the improved connections to sea ports), ii) continued subsidies for CT solutions (in Tyrol also for single wagon transport) and iii) the uptake of smart solutions and AI.

Main insights and further need for action:

- The implementation of measures can still be better coordinated to provide strong incentives for modal shift, e.g. through a joint support mechanism for CT or a common approach on capacity management.

Pillar 4: Sustainable passenger transport

- Public transport infrastructures and services are further extended in all **iMONITRAF!** regions, e.g. with ambitious efforts in the Autonomous Province of Bolzano/Bozen to close missing links and to electrify railway lines.
- Further steps are taken towards attractive information and ticketing solutions, e.g. with the Euregio tickets or the Ticino ticket.
- Mobility platforms improve services for public transport users as they offer integrated solutions for planning trips and easy payment.

Main insights and further need for action:

- **iMONITRAF!** regions are currently pioneering new solutions to increase attractiveness of public transport. The exchange on lessons learned helps to identify success factors for cross-border implementation.

Needs for further action & next steps

The two work focuses 2024 have provided insights for further need for action both within the **iMONITRAF!** network and also for networking on national and European level.

Insights and recommendations on CT

Our discussion paper on Combined Transport highlights the following lessons learned:

- **Comprehensive Policy Mix:** Effective CT requires a balanced approach of push and pull measures. Significant funding for infrastructure and operations is essential to make CT more attractive and accessible.
- **Dynamic Policy Adjustments:** Continuous evaluation and adjustments of policy frameworks are crucial to maintain effectiveness. This includes adapting to infrastructure upgrades and developments along transit corridors, as demonstrated by Switzerland's experience.
- **Coordination and Infrastructure:** Coordinated efforts are also vital for testing new technologies and digital solutions.

A revised European framework for CT should incorporate these insights. Specifically, the toolbox, as included in the Commission proposal on the revised CT Directive, should take an integrated approach – the typology developed by **iMONITRAF!** could be used as example. Support measures for CT and also the use of digital solutions only become effective if they are coordinated throughout the whole corridor. Therefore, that the new National Policy Frameworks of the CT Directive should also be coordinated at the level of the TEN-T corridors.

Insights on Rail efficiency

Capacities for rail transport on the Alpine corridors are limited and freight transport has to compete with the financially more attractive passenger transport. Today's framework conditions for rail freight management allow little flexibility and are not in line with needs of the logistic sector with its much shorter planning cycles.

The Infrastructure Capacity Regulation currently developed at EU level, will improve capacity management also along the **iMONITRAF!** corridors:

- **Capacity strategy:** To define core elements on how to use capacities, especially the volumes and shares for each market segment. Stakeholders, including the regions, need to be involved in the set-up.
- **Flexible approach to capacity planning:** The proposal foresees a shift from annual planning to a more flexible approach, allowing an adaptation and rescheduling of allocated capacity.
- **Consensual conflict resolution mechanism:** To deal with conflicting capacity needs and requests, based on a common set of criteria.

Further need for action at EU and national level

In addition to those two dossiers, **iMONITRAF!** will use opportunities for networking on:

- **Weights and Dimensions of HGV:** The revision is still not finalized and new developments need to be reviewed.
- **New Air quality limits:** Smooth implementation of new air quality limits in national legislation.

Outlook 2025

The year 2025 will become a decisive year for **iMONITRAF!**, especially regarding the internal organisation and continuation of the network.

Political networking: Shall be intensified, to strengthen the coordination efforts and identify joint challenges. A networking event will take place in Erstfeld (CH) in April 2025.

Update of iMONITRAF! policy pathway: Over the last two years, **iMONITRAF!** has developed insights for finetuning the policy mix– these will be merged in a dynamic adjustment of the policy pathway.

Link to EUSALP Mobility Conference: The EUSALP co-presidency of Austria and Liechtenstein will be used to raise mobility transition on the political agenda – **iMONITRAF!** will use this opportunity to highlight its activities and expertise.

New partnership agreement: In addition, **iMONITRAF!** partners need to renew their commitment and partnership agreement.

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