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COMMISSION STAFF WORKING DOCUMENT

Analysis of the Member States' 2025 ITS reports

Accompanying the document

Report from the Commission to the European Parliament and the Council

on the implementation of Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport

{COM(2026) 165 final}

Contents

Analysis of the Member States' 2025 ITS reports

1. Introduction

This document summarises the analysis of the national ITS reports[1] provided by the Member States (and Norway) as per Article 17(1) of Directive 2010/40/EU. It constitutes an overview of the national reports, based mostly on their content and on the Commission's understanding of these reports.

The following sections combine information provided on national activities and projects in the priority areas as well as information on the implementation of the delegated acts, including on the availability of crucial data types listed in Annex III and the deployment of services listed in Annex IV to the ITS Directive. This document also analyses the information on deployment, benefit and financial KPIs (key performance indicators) provided in the national reports.

2. Priority areas and priority actions

2.1. Priority area I: Information and mobility ITS services

Implementation of priority area I is moving towards a good level of maturity and diversity. The implementations of Delegated Regulations (EU) 2017/1926 and 2022/670 were strongly supported by successive Connecting Europe Facility (CEF) programme support actions, including DATEX II[2], Data4PT[3], TN-ITS GO[4] and NAPCORE. These actions have now been consolidated in the ongoing CEF technical assistance action NAPCORE-X (2025-2027)[5], which involves all Member States. NAPCORE-X focuses on implementation challenges related to data standards and definitions, metadata, data quality, compliance assessment, dissemination and training, with the aim of ensuring a high level of maturity and consistency across the EU.

In parallel, Member State reports highlight a broad variety of large ITS projects co-funded by the CEF, often covering several Member States and Trans-European Transport Network (TEN-T) corridors. These projects enable long stretches of infrastructure to be equipped with harmonised and interoperable ITS infrastructure, equipment and services, supporting a wide range of information and mobility ITS services and illustrating the diversity of priority area I implementation. Still, significant progress is needed as regards the availability of data in most Member States in order to comply with the deadlines set out in Annex III to the ITS Directive.

EU-wide multimodal travel information services (MMTIS – priority action (a) – Delegated Regulation (EU) 2017/1926)

Since the second Commission progress report, all Member States have established their national access points (NAP), although two are in the early stage of development and should soon be upgraded to support the necessary functionalities required by the legislation. A gradual

[1] National ITS reports are available on https://transport.ec.europa.eu/transport-themes/smart-mobility/road/its-directive-and-action-plan/its-national-reports_en.
[2] https://datex2.eu/.
[3] https://data4pt-project.eu/.
[4] https://tn-its.eu/.
[5] https://napcore.eu/.

expansion was also reported in both the number of data holders publishing data and the types of data holders involved. In many Member States, this increase is linked to stepped-up efforts to reach out to stakeholders and inform them of their legal obligations.

However, further analysis indicates that data accessibility via NAPs still varies across Member States, with significant gaps in some cases. While it has not yet reached the target set in the legislation, overall the trend is improving steadily (in particular for static data at service levels 1 to 3, as described in the annex to the specifications). While some gaps may be explained by the lack of available digital data, data such as timetables and tariffs for rail and aviation usually already exist in digital machine-readable format and should be made accessible via the NAPs. Further enforcement measures may therefore be necessary to address these shortcomings.

Most Member States also reported efforts to improve the functionalities of their NAP to facilitate data re-use. In particular, one third of Member States reported that they had introduced mobilityDCAT-AP[6], a European standard for metadata that was developed in the context of the NAPCORE project and that allows for a clear understanding of accessible data via the NAP. Beyond metadata, some Member States also reported additional NAP functionalities to improve data quality, such as validation tools and procedures. The Member State reports clearly show that the coordination projects co-funded by the CEF played a crucial role in implementing effective and harmonised tools. Two such projects are Data4PT and NAPCORE, the activities of which are now being further developed within the NAPCORE-X technical assistance action co-funded by the CEF.

Despite these advancements, adhesion to EU standards, particularly NeTEx and SIRI, remains inconsistent and does not fully meet the requirements set out in Articles 4 and 5 of Delegated Regulation (EU) 2017/1926. In this regard, the NAPCORE-X project is expected to provide valuable support in two key areas: (i) facilitating the systematic monitoring of standards applied across NAPs[7], including those relevant to MMTI, and (ii) promoting the adoption of these standards by data holders through dedicated support actions, building upon the foundations established by the Data4PT project.

Regarding the assessment of compliance with the Delegated Regulation, although many reports identified the competent authorities responsible for this task, very little information was provided on their enforcement strategies. Addressing this gap may therefore be necessary in the near future.

Finally, the analysis of Member State reports shows a growing commitment to improving passenger information services and facilitating access to ticketing. Various journey-planning and ticketing initiatives have been developed at national level, as well as through cooperation with other Member States via the linking of travel information services.

Real-time traffic information services (RTTI – priority action (b) – Delegated Regulation (EU) 2022/670)

Most Member States reported numerous ongoing national and European RTTI-related deployment initiatives, showing that RTTI-related services, ongoing implementation efforts

[6] https://napcore.eu/metadata/.

[7] Work item 2.2.1 of the project*: Identification of gaps and list of requirements – Milestone 2.4 List of gaps and used standards.*

and continuous improvement were being prioritised. In addition, some Member States reported that they were working on standards and the development of tools (e.g. to support local authorities), which illustrates their willingness to address the recent extension of the RTTI Delegated Regulation to cover the entire road network. Member States presented various ways of acquiring data, such as cameras, floating car data and sensors. Most Member States also mentioned their active involvement in the NAPCORE project, including work on data quality.

Overall, significant progress has been made in terms of accessibility, exchange and re-use of data types as set out in Annex III to the ITS Directive, though there are discrepancies between Member States. A substantial number of Member States did not report any significant changes regarding accessibility, exchange and re-use of data, as they had already reported previously advanced levels of implementation. However, reports still show uneven and sometimes limited availability of data for static and dynamic traffic regulations. Most Member States reported broad availability of dynamic data on the state of the network (e.g. road closures), for the entire road TEN-T network; nevertheless, this data is absent in a few Member States, which may make it harder to meet the first deadline set out in Annex III to the ITS Directive (31 December 2025 for road and lane closures and roadworks on the trans-European core network for roads).

As regards compliance assessment, most Member States have appointed a competent authority responsible for this task. Some Member States are still in the process of appointing a (new) authority, whereas others have not appointed one yet. A few Member States conducted a compliance assessment during the reporting period, or have stated that they are working on it, for example by enabling self-declarations. One Member State reported that it is sharing experience-based knowledge with municipalities and external data owners to support their own compliance process. Most Member States, however, did not report any active compliance assessment or enforcement activities during the reporting period. Nevertheless, common work within the NAPCORE project provided for the development of templates for self-declarations and harmonised compliance assessment processes. This will contribute to a common compliance assessment across Europe and should allow for comparability.

All Member States provided a URL for the RTTI NAP, with diverse choices regarding the NAP architecture. However, a few of them still have only very basic features, which calls into question their ability to fulfil the legal requirements without significant upgrades. Few Member States reported significant progress in the development or setting up of their NAPs, while some Member States reported continuous efforts to keep improving their NAPs.

Regarding data standards, DATEX II (including TN-ITS) is the predominant data standard for RTTI-related data items. One fourth of Member States reported having introduced the mobilityDCAT-AP metadata standard. This number should increase further thanks to the new CEF-funded TISGRADE project (2025-2028), which aims to implement that standard in 13 Member States. This project should also provide for RTTI data collection tooling, dataset quality validation and NAP upgrades, as well as implementing a public-private feedback loop on data quality in many Member States.

Regarding quality, 14 Member States and associated countries launched the RTTI Task Force to cooperate with stakeholders on minimum quality requirements, as required by the RTTI Delegated Regulation. In 2025, the RTTI Task Force contributed to the creation of the TISA

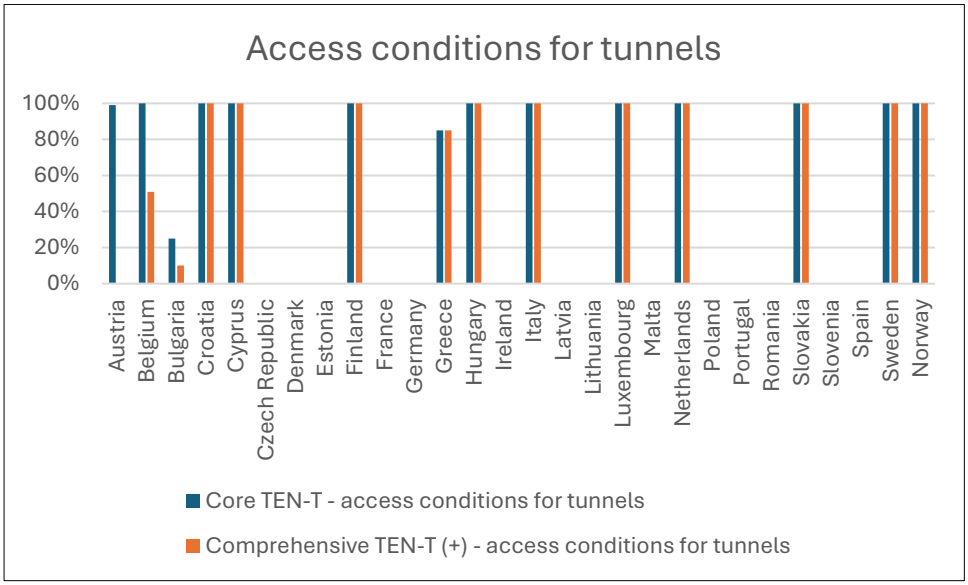
RTTI 5-Star Rating Specification[8] by providing feedback to and engaging in dialogue with the Traveller Information Services Association (TISA). Additionally, the RTTI Task Force organises consultations with industry partners on the implementation of the RTTI Delegated Regulation in order to reach agreements on the mandatory processing and inclusion of data in end-user services. This dialogue also proved valuable in addressing experiences of using the NAPs.

Diagrams on the availability of data

The following diagrams[9] illustrate the availability of crucial RTTI and MMTIS data types listed in Annex III to the ITS Directive (source: Member State national ITS reports for 2025)[10].

Figure 1: Access conditions for tunnels on the core and comprehensive TEN-T(+)

- Tunnels do not exist in Estonia, Latvia and Lithuania.
- For Austria, only static data; temporary limitations not yet available.



[8] RTTI 5-Star Rating Specification.

[9] Comprehensive TEN-T (+) means the core and comprehensive trans-European network for roads, other motorways and sections of primary roads, where the total annual average daily traffic is more than 8 500 vehicles, and all roads in the cities at the centre of each Urban Node as defined in Article 3, point (p), of Regulation (EU) No 1315/2013 of the European Parliament and of the Council (1) and listed in that Regulation, including those administered by the cities. The Member State may choose to limit the coverage in cities at the centre of Urban Nodes to streets where the annual average daily traffic is more than 7 000 vehicles.

[10] In some Member States, some data types do not exist because the underlying information does not exist. This is indicated for each diagram.

Figure 2: Access conditions for bridges on the core and comprehensive TEN-T(+)

- For Austria, only static data; temporary limitations not yet available.
- For Slovakia, only static data.

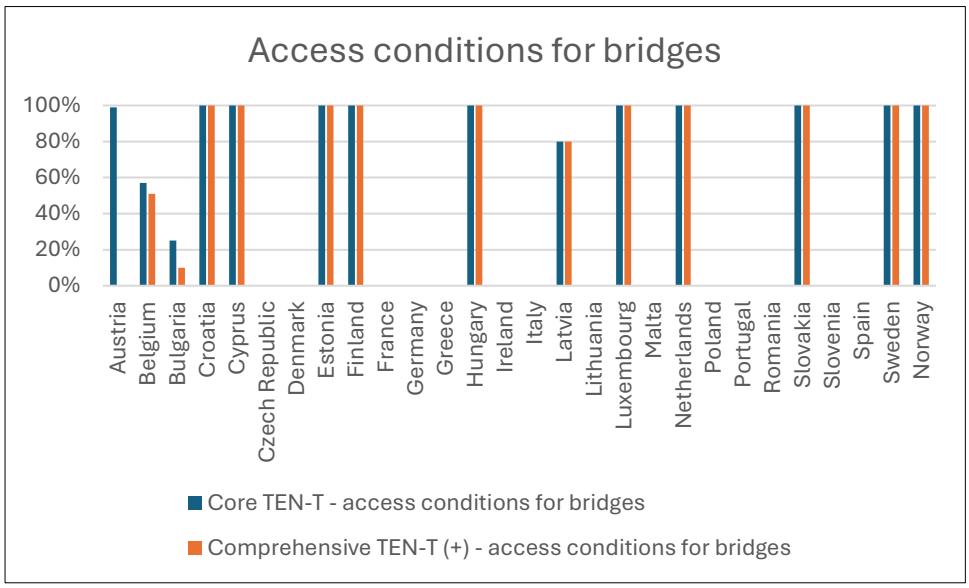


Figure 3: Speed limits on the core and comprehensive TEN-T(+)

- Only static data for France and Slovakia.

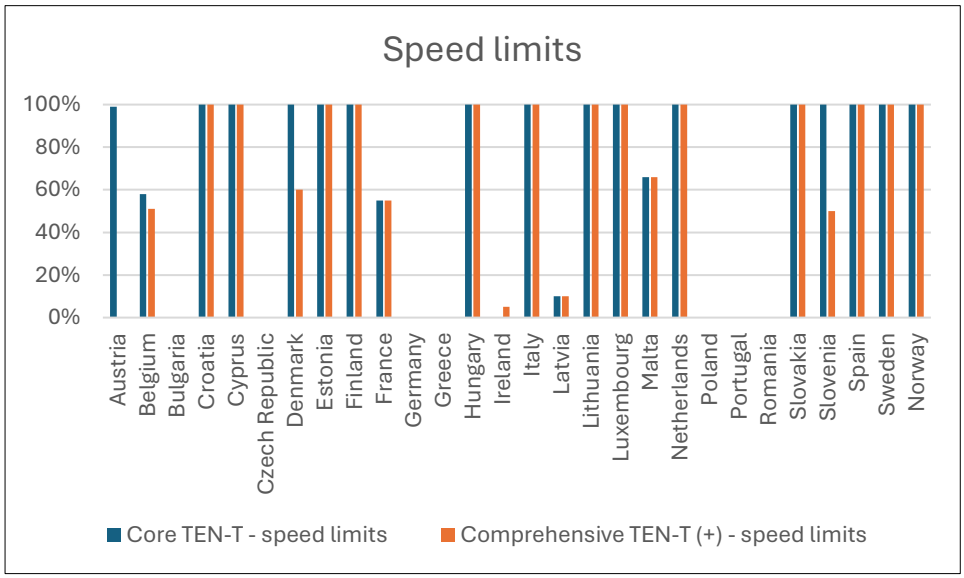


Figure 4: Overtaking bans on heavy goods vehicles on the core and comprehensive TEN-T(+)

- Do not exist in Estonia and Slovakia.

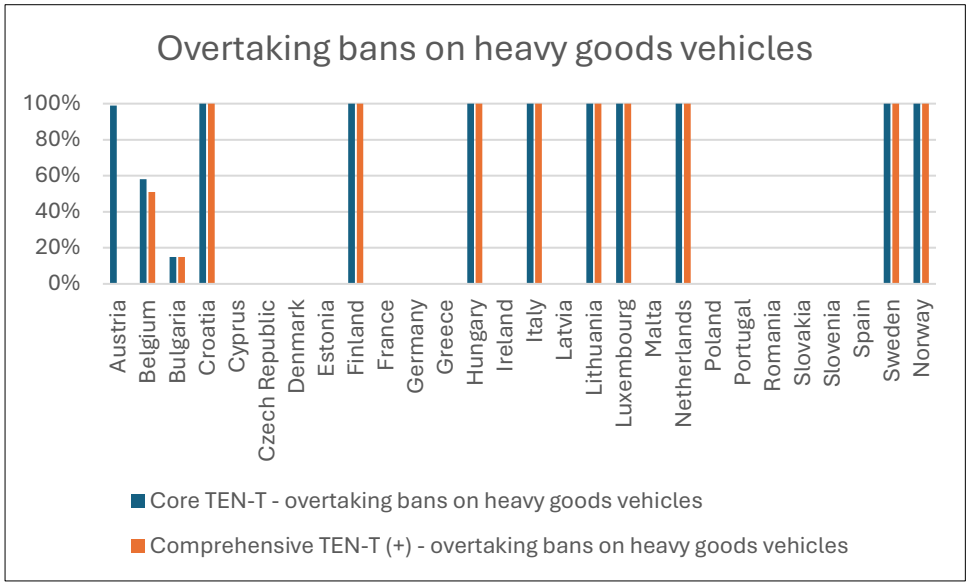


Figure 5: Weight/length/width/height restrictions on the core and comprehensive TEN-T(+)

- For Slovakia, only static data.

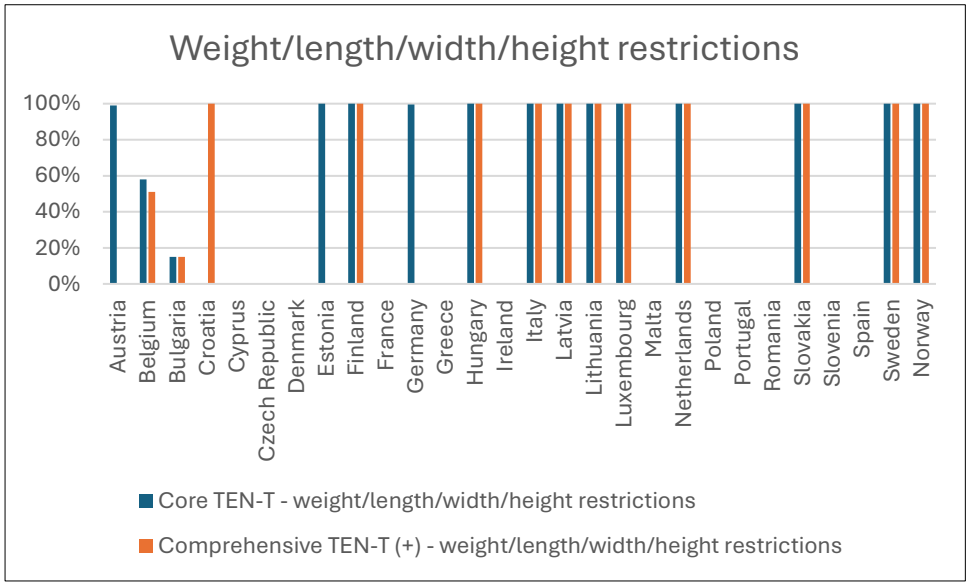


Figure 6: One-way streets in centre of urban nodes

- No urban nodes in Norway.

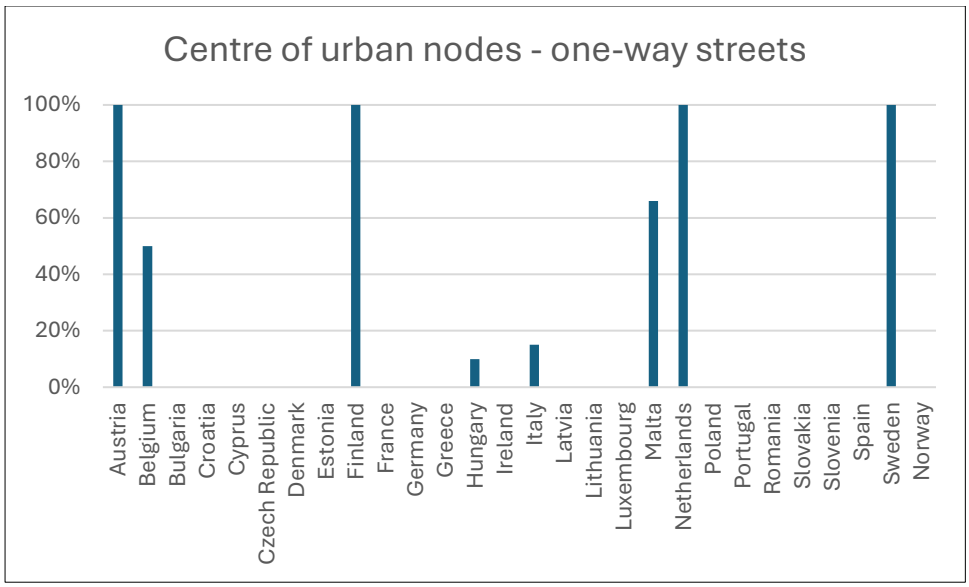


Figure 7: Freight delivery regulations in centre of urban nodes

- No freight delivery regulations in Estonia.
- No urban nodes in Norway.

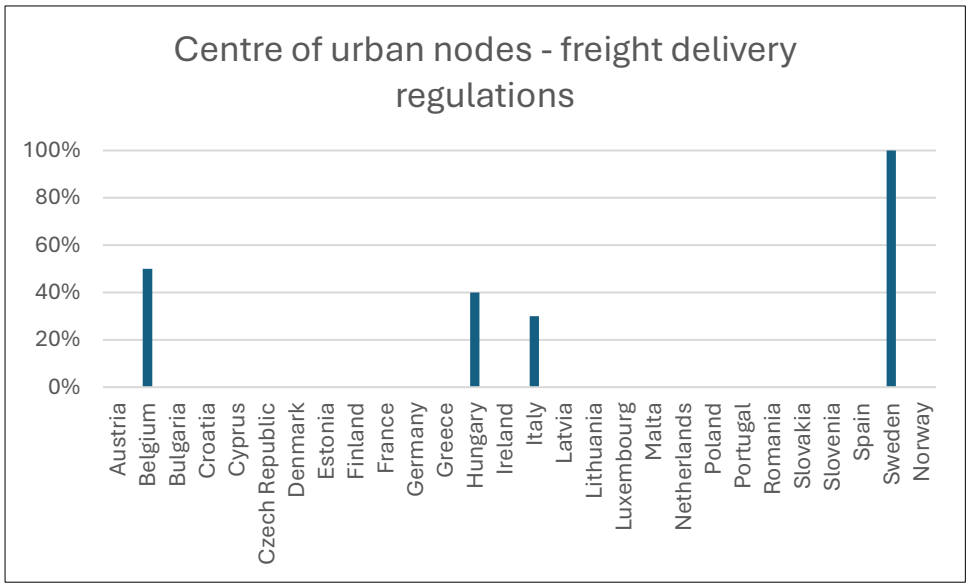


Figure 8: Direction of travel on reversable lanes on the comprehensive TEN-T (+)

- Reversable lanes do not exist in Austria, Belgium, Estonia, Finland, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Slovakia and Norway and are barely used in the Czech Republic.

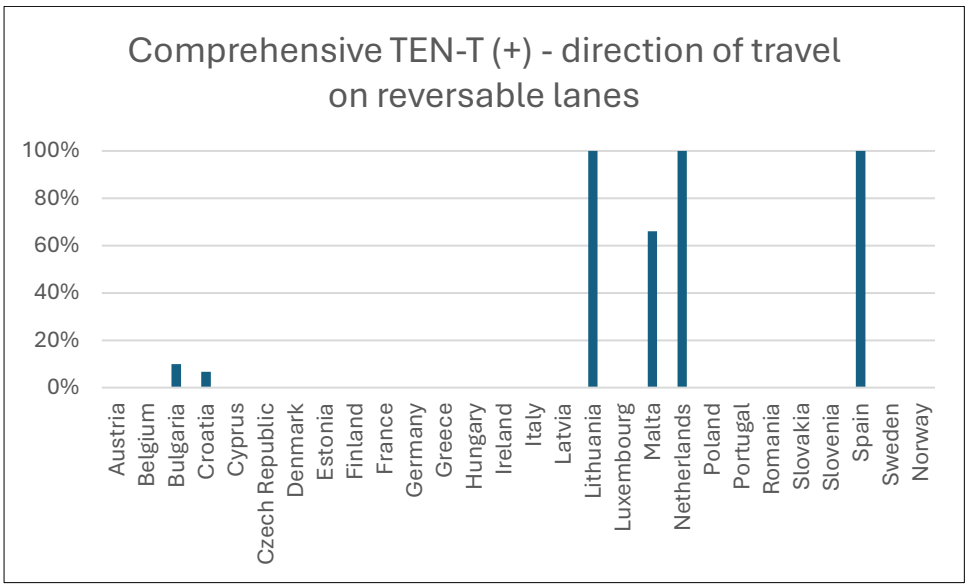


Figure 9: Traffic circulation plans on the comprehensive TEN-T (+)

- Do not exist in Finland, Greece, Slovakia and Norway.

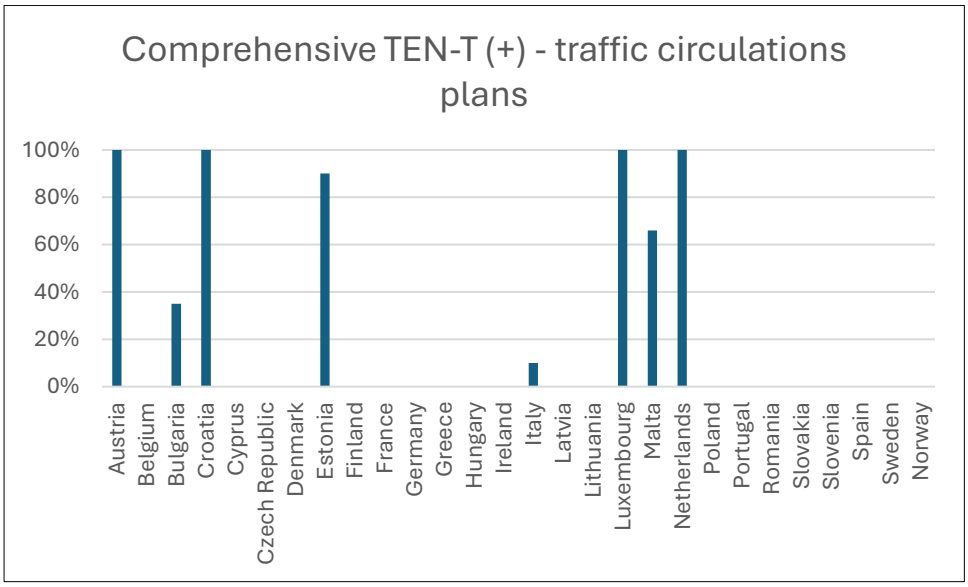


Figure 10: Permanent access restrictions on the comprehensive TEN-T (+)

- Do not exist in Luxembourg and Slovakia.

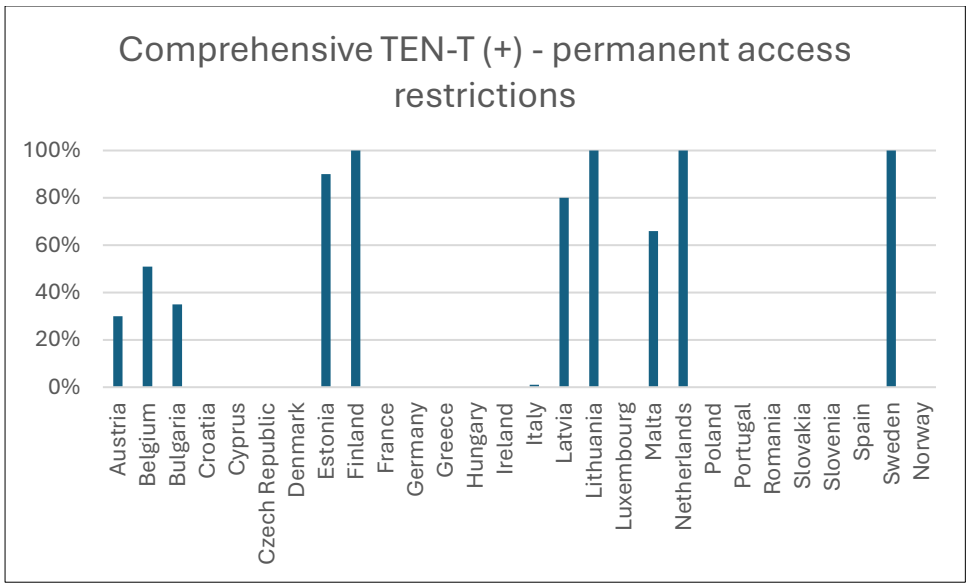


Figure 11: Boundaries of restrictions, prohibitions or obligations with zonal validity, current access status and conditions for circulation in regulated traffic zones on the comprehensive TEN-T (+)

- Do not exist in Luxembourg and Slovakia.
- For the Netherlands, 100% data availability for Env emissions / zero emission zones, 0% for others.

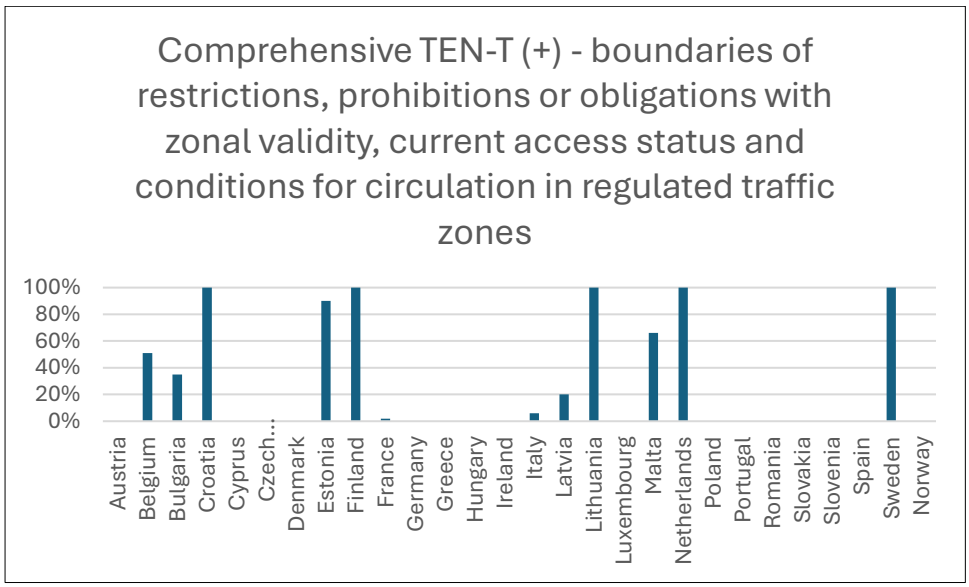


Figure 12: Road closures on the core and comprehensive TEN-T

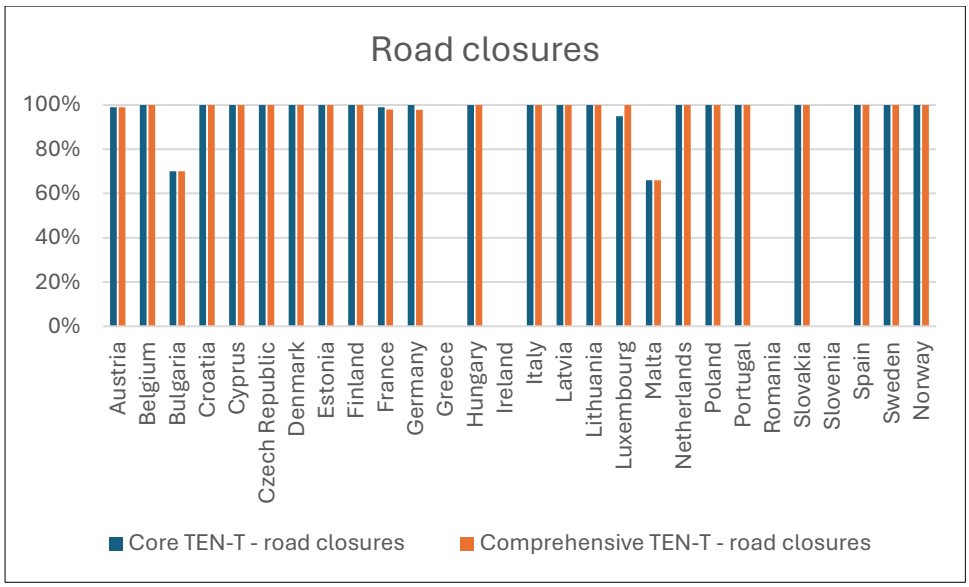


Figure 13: Lane closures on the core and comprehensive TEN-T

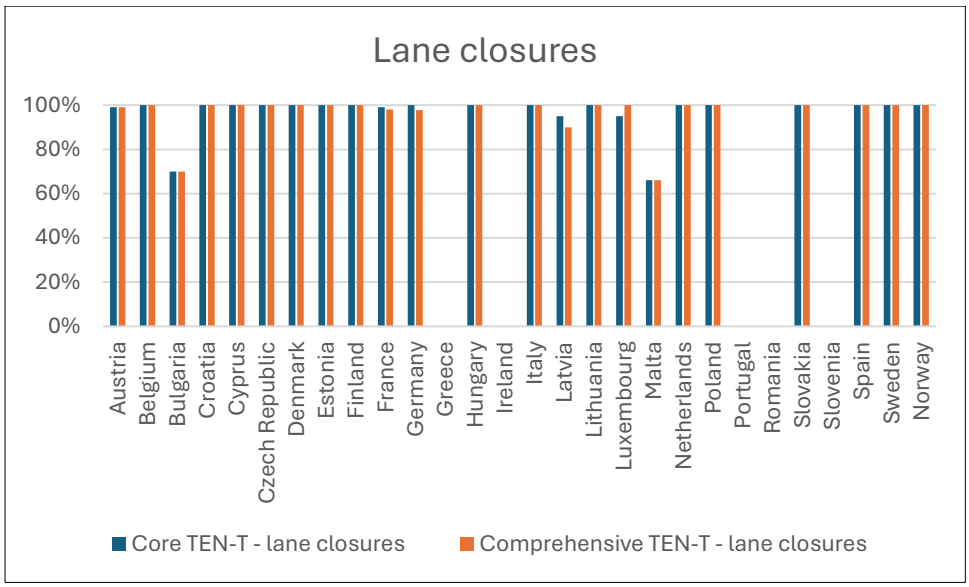


Figure 14: Roadworks on the core and comprehensive TEN-T

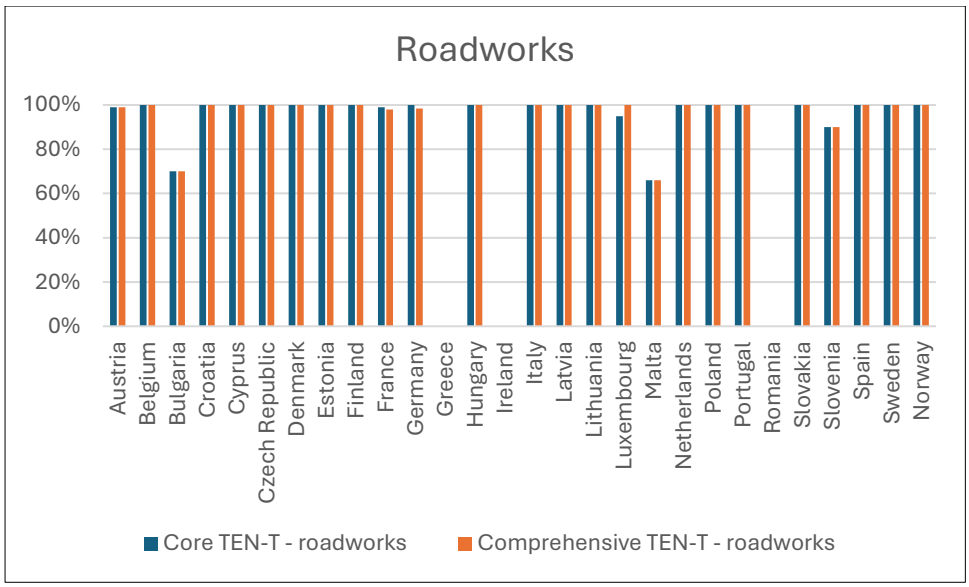


Figure 15: Temporary traffic management measures on the core and comprehensive TEN-T

- No value for Sweden, as all data types in Annex III 1.2, concerning the state of the network, can be regarded as temporary traffic management measures.

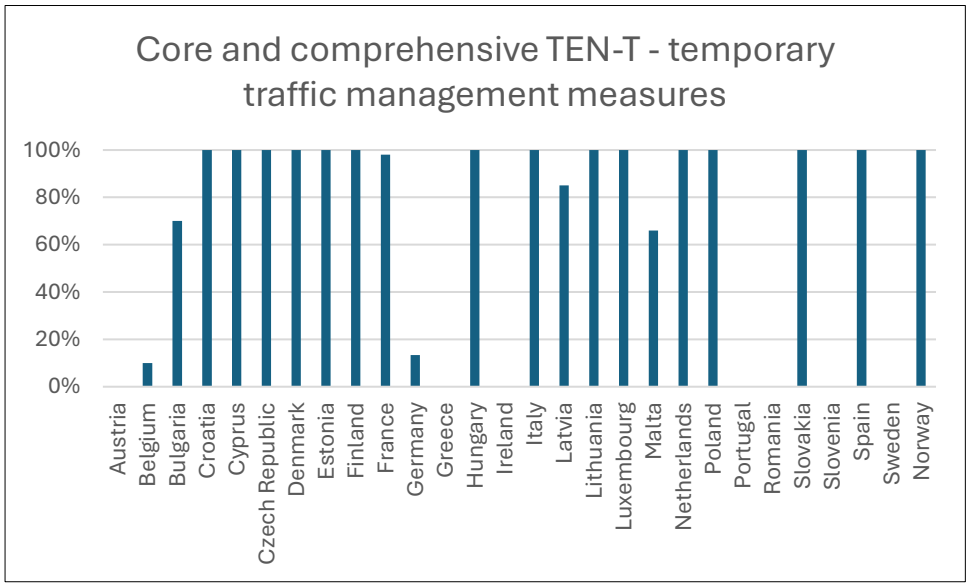
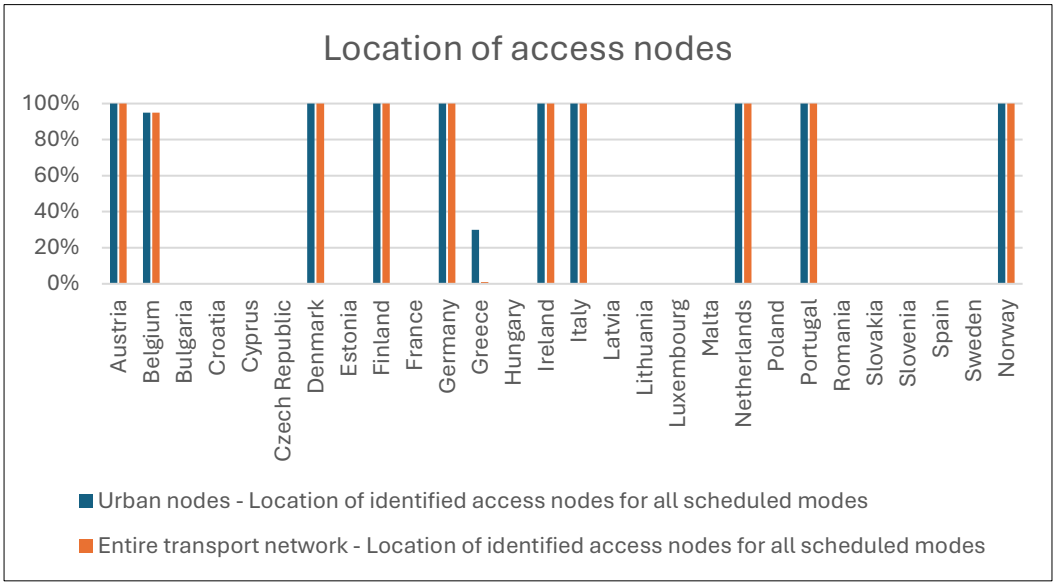


Figure 16: Location of access nodes in the urban nodes and the entire transport network

- Austria: 100% data availability for location, lower values for the path inside access nodes.
- Belgium: no data on accessibility.
- Denmark: data on accessibility partly available (25% for urban nodes, 50% for the entire network).
- Estonia: static timetables and the locations of stops are 100% available.
- Finland: lack of complete accessibility information.
- Greece: rough calculation based on population or network prorata.
- Ireland: airports missing.
- Netherlands: ferries missing.
- Portugal: 100% data availability for rail, light rail, metro and tram. Between 20% and 30% for bus, between 64% and 80% for long-distance bus. No data yet on accessibility and tracks inside the nodes. 0% for air, cable, maritime and inland waterway.
- Sweden: static traffic data of locations are available for all modes via API, web and apps for the 18 urban nodes, and on the entire network for all train stations and most access nodes for other modes via API, web and apps. There is, however, a lack of complete information on accessibility aspects in many cases.



2.2. Priority area II: Travel, transport and traffic management ITS services

Member States have reported a wide range of ongoing and planned projects aimed at improving traffic and incident management, with the overarching objective of optimising the use, resilience and safety of transport infrastructure. These initiatives illustrate both the technological progress and complexity involved in integrating diverse transport modes, data sources and operational environments.

A significant trend that emerges from the data analysed concerns the upgrading of traffic and incident management centres through the deployment of new digital tools, e.g. data-processing systems and automation technologies.

Some Member States reported having introduced digital twin solutions to support real-time visualisation and modelling of traffic conditions. Others are progressing towards increased automation of traffic management, including systems that adjust variable speed limits automatically based on weather conditions, road data and advanced situational-awareness

inputs. Additional projects focus on developing multimodal traffic monitoring and forecasting tools, as well as software applications capable of assessing, validating and integrating data from a wide range of external sources.

A second important finding is the breadth of thematics within the reported initiatives.

Traffic management activities are not limited to the road sector but increasingly encompass rail and multimodal urban environments. Some projects aim to improve motorway traffic efficiency, while others focus on better connecting transport modes in cities or supporting alternative mobility solutions, for example through reserved car-sharing lanes.

Innovative passenger-flow management measures are also emerging. One example involves the display of real-time occupancy levels along metro platforms, encouraging passengers to distribute themselves more evenly across train carriages and thereby improving service reliability and user experience.

Freight integration features prominently across several initiatives.

Member States recognise that access to accurate and timely freight information is essential for improving network performance, reducing congestion and supporting efficient logistics operations. To this end, cities are testing freight-access management scenarios and assessing their impacts on urban logistics flows. At the same time, some Member States provided information on their work in the context of the Digital Transport and Logistic Forum (DTLF) and their efforts to comply with the European Electronic Freight Transport Information (eFTI) Regulation[11] and its delegated and implementing acts. These provide for the transition from paper-based document exchanges to standardised electronic cargo transport data, in all modes. In line with these efforts, digital maritime data-management systems – modelled on the European Maritime Single Window environment – are being used to streamline port operations by facilitating the digital exchange of logistics and vessel-related information.

Across all projects, there is a common challenge: the need to monitor, integrate and coordinate increasingly complex transport ecosystems involving multiple modes, stakeholders and data sources.

Despite significant progress in digitalisation, relatively few initiatives explicitly address standardisation or the harmonisation of interfaces. The overall project landscape thus highlights both important developments but also the need for European-level support to promote consistent, interoperable and efficient traffic management across the EU. This shows that the activity on improved traffic and incident management of the ITS working programme 2024-2028 is especially pertinent.

2.3. Priority area III: Road safety and security ITS services

Implementation of priority area III is fairly well advanced. However, technological advancements and the need to further include private companies in the provision of data mean

[11] Regulation (EU) 2020/1056 of the European Parliament and of the Council of 15 July 2020 on electronic freight transport information (eFTI Regulation). OJ L 249, 31.7.2020, p. 33, ELI: http://data.europa.eu/eli/reg/2020/1056/oj.

that continuous work is necessary. This work includes the ongoing revision of Delegated Regulations (EU) Nos 885/2013 and 886/2013.

112 eCall is operational in all Member States. The main ongoing work for this priority action is the shift to 4G/5G networks, with the necessary upgrade of eCall public safety answering points (PSAPs).

A road safety-related minimum universal traffic information service is available to end users in many Member States, but some events and conditions are not yet thoroughly covered. Similarly, information on safe and secure truck parking is available in many Member States where such parking areas exist, but some gaps in coverage persist, and the availability of static and dynamic data is not yet fulfilled.

112 eCall (priority action (d) - Delegated Regulation (EU) No 305/2013)

The eCall public safety answering point infrastructure has been deployed since Octobre 2017, and most Member State reports confirmed their eCall PSAPs being operational, while also reporting additional information such as the integration of eCall data in traffic management, cross-border interoperability with neighbouring countries, the use of EUCARIS for linking with national databases, the testing of eCall functionality as part of the vehicle inspection process or information about the body responsible for conformity assessment. Few reports contained information about the number of eCalls; however, this information can be found in another regular Commission report on the implementation of the EU emergency number 112, based on Member States' input[12], which shows a steady increase of the number of eCalls.

Many reports also provided information on ongoing work on the upgrade of PSAPs to be ready by 1 January 2026 to support the reception and handling of eCalls using IMS packet-switched networks (4G, 5G), as required by Delegated Regulation (EU) 2024/1084, as well as information on their participation in the CEF co-funded X-HeERO project, which supports this upgrade.

Member States will inform the Commission of the state of implementation of this upgrade by 1 April 2026.

Road safety-related minimum universal traffic information free of charge for users (SRTI – priority action (c) – Delegated Regulation (EU) No 886/2013)

Overall, relevant improvements were reported by the Member States as regards data availability and services in the area of road safety-related minimum universal traffic information (SRTI).

17 Member States reported high (>90%) or complete coverage of the core and comprehensive trans-European network for roads and other motorways not included in that network by an SRTI service. Another three Member States reported low coverage (<30%) and seven Member States did not report any service coverage.

Data accessibility via the NAPs, for the different events and conditions listed in the Delegated Regulation, mostly mirrors the service availability, with some fluctuations between the different events and conditions. Many Member States reported full coverage of the available

[12] 2024 Report on the implementation of the EU emergency number 112 | Shaping Europe's digital future.

data, while a couple have limited availability and a few reported no data availability at all (including one Member State that announced data collection via a video-analytics tool in 2026). The diagrams on the availability of SRTI data show that for some Member States there are still significant gaps to be addressed in order to comply with the requirements of Article 6a of and Annex III to the ITS Directive, i.e. the first deadline of 31 December 2025 for the availability of data on the whole road TEN-T network and other motorways not included in that network.

There are multiple sources of SRTI data. Camera and weather stations are still being upgraded by road operators and portable equipment (cones, crash absorber, etc.) is being designed to be able to create SRTI warnings.

In addition, in-vehicle data is increasingly important. The participation of several Member States, vehicle manufacturers and service providers in the Data for Road Safety Platform (DFRS)[13] has led to greater use and exchange of information based on in-vehicle data through work on common definitions, community building and data exchange possibilities.

A second relevant advancement is the merging of SRTI services with C-ITS services. Multiple Member States have started transmitting SRTI events via C-ITS and use C-ITS for collecting data on SRTI events.

Beyond the current scope of the current SRTI Delegated Regulation, Member States have started projects to include additional safety-related events in SRTI services, most notably end-of-queue and emergency vehicle approaching services.

Despite the advancements, the reports show that there is still a lack of SRTI event data from private companies findable via the NAPs. This correlates with the low number of compliance assessments and enforcement activities reported by the Member States. Based on other sources, it seems that one of the reasons could be the lack of clarity of the Delegated Regulation adopted in 2013, i.e. before recent technical changes, in particular related to the use of vehicle data and regarding the definitions of the different roles, rights and obligations.

The ongoing work on the revision of Delegated Regulation (EU) No 886/2013 takes these findings into account. It should better integrate technological advancements, clarify wording and better define the roles so as to improve the assessment and enforcement of compliance, align the Delegated Regulation with the current EU legal framework, and simplify it where possible.

Safe and secure parking places for trucks and commercial vehicles (SSTP – priority action (e) – Delegated Regulation (EU) No 885/2013)

Delegated Regulation (EU) No 885/2013 leaves it up to Member States to designate areas of the trans-European road network (TERN) where traffic and security conditions require the deployment of information services on safe and secure parking places. Eight Member States declared that they do not have safe and secure parking and they are therefore not included in the diagrams representing the availability of the related data. This situation should of course improve with the implementation of the new requirements on safe and secure parking stemming from the TEN-T Regulation, and already one of the eight Member States has announced plans for the creation of such parking along its motorways.

[13] https://www.dataforroadsafety.eu/.

Overall, the reports show good coverage of the TEN-T road network with static data about safe and secure parking areas (e.g. location, parking capacity, access to road identifiers) for most Member States. Static data about the safety conditions and equipment of safe and secure parking areas (e.g. description of equipment) is also broadly available, though in fewer Member States. Dynamic information about the availability of safe and secure parking places is the least available, as it also depends on the deployment of the infrastructure necessary to produce such information. One Member State reported that coverage for public truck parking is 100%, whereas coverage for private truck parking is only 20%.

Some Member States reported that they are still working on their NAPs to meet the requirements of the SSTP Delegated Regulation. The diagrams on availability of SSTP data indicate that for some Member States there are some gaps to be addressed in order to comply with the requirements of Article 6a of and Annex III to the ITS Directive, i.e. the first deadline of 31 December 2026 for the availability of static data on the core TEN-T network. That said, at least two Member States already provide data on truck parking beyond the TEN-T network, in particular on the national road network.

Although not mandatory, there is a positive trend emerging where we are seeing more dynamic data being made available. An interesting development is Germany's plan to introduce a nationwide system for collecting dynamic information: data covering all federal motorways should be published via the NAP, with the aim being to discontinue the installation of physical boards that display the availability of parking places.

In addition to giving access to data via their own NAP, 10 Member States with safe and secure truck parking also share data with the European Access Point for Truck Parking Data (ETPA) developed by DG MOVE. ETPA offers a web interface allowing authorities to upload their SSTP data, which is then shared on the Commission's data portal[14] and made available on the TENtec Interactive Map Viewer[15].

As regards standards, DATEX II is the predominant standard for SSTP-related data, the use of other data standards being low. Most Member States have appointed a national body responsible for compliance assessment. However, no Member States reported any active compliance assessment or enforcement activities during the reporting period.

Some reports pointed out that the definitions provided in Delegated Regulation (EU) No 885/2013 and in Delegated Regulation (EU) 2022/1012[16] were not the same. This should be addressed in the planned revision of Delegated Regulation (EU) No 885/2013.

Diagrams on the availability of data and services

The following diagrams illustrate the availability of crucial SSTP and SRTI data types and services listed in Annex III and IV to the ITS Directive (source: Member State 2025 reports).

[14] https://data.europa.eu/data/datasets/etpa?locale=en.

[15] https://webgate.ec.europa.eu/tentec-maps/web/public/screen/home.

[16] Commission Delegated Regulation (EU) 2022/1012 of 7 April 2022 supplementing Regulation (EC) No 561/2006 of the European Parliament and of the Council with regard to the establishment of standards detailing the level of service and security of safe and secure parking areas and to the procedures for their certification, OJ L 170, 28.6.2022, p. 27, ELI: http://data.europa.eu/eli/reg_del/2022/1012/oj.

Availability of data on safe and secure parking places for trucks and commercial vehicles on the core and comprehensive trans-European network for roads[17]

Figure 17: Safe and secure parking places for trucks and commercial vehicles on the core and comprehensive TEN-T for roads - Static data related to the parking areas

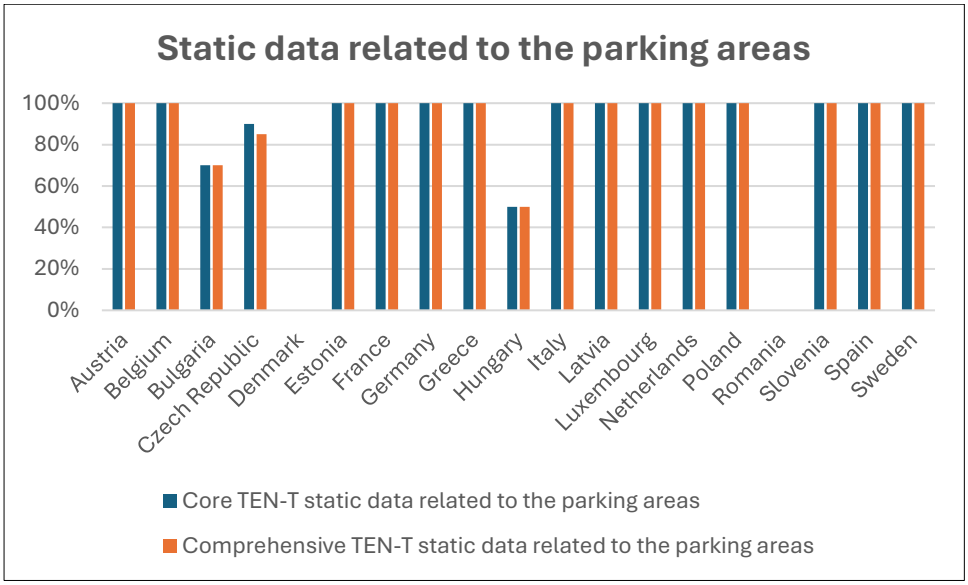
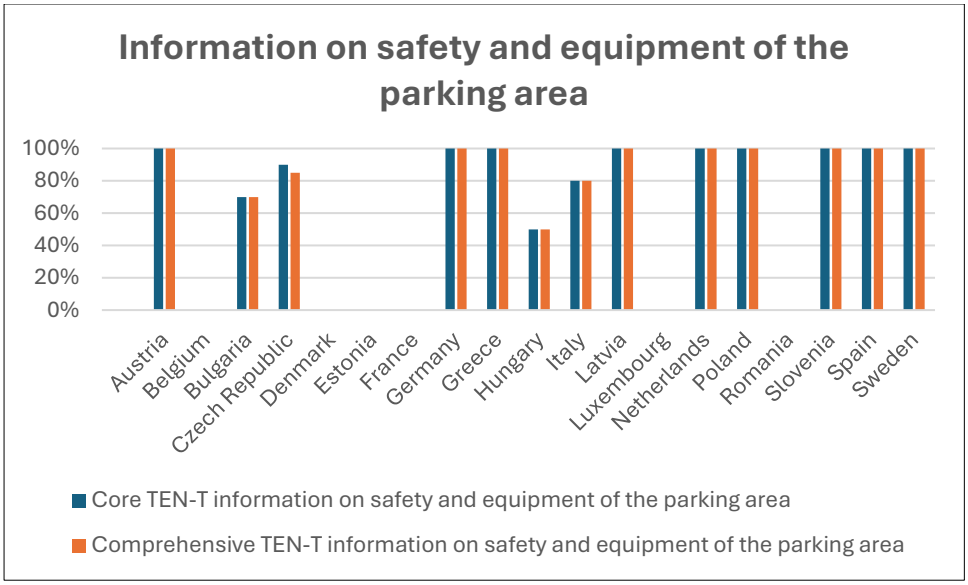
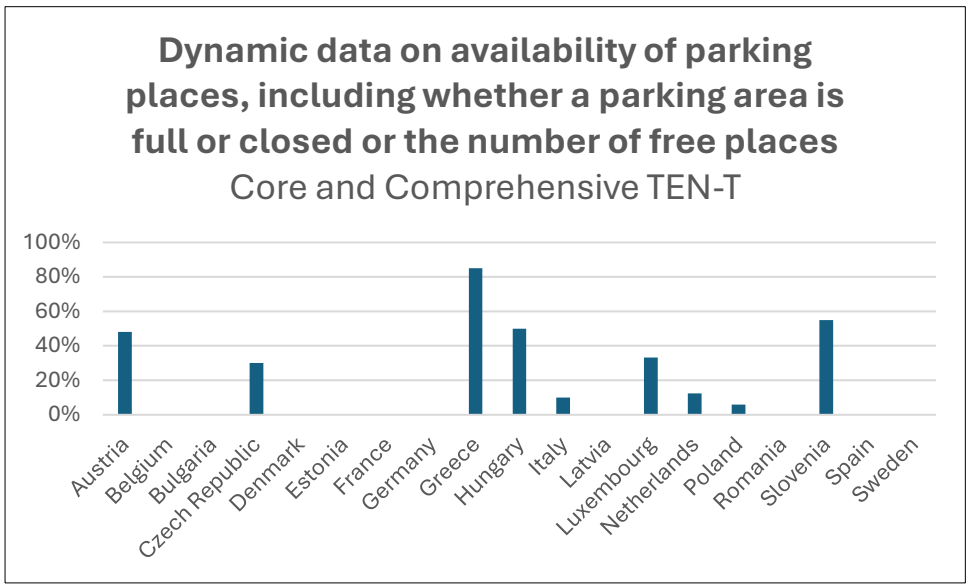


Figure 18: Safe and secure parking places for trucks and commercial vehicles on the core and comprehensive TEN-T for roads - Information on safety and equipment of the parking area



[17] - Croatia, Cyprus, Finland, Ireland, Lithuania, Malta, Norway, Portugal and Slovakia declared that they do not have safe and secure truck parking areas.
- For Austria, only data on the ASFINAG-managed network.

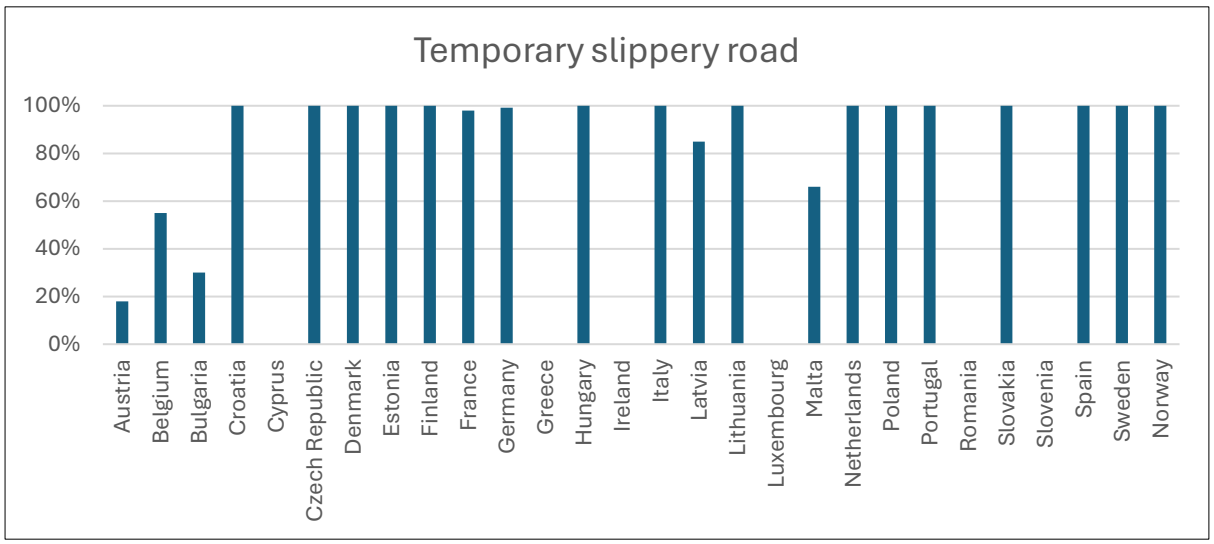
Figure 19: Safe and secure parking places for trucks and commercial vehicles on the core and comprehensive TEN-T for roads - Dynamic data on availability of parking places including whether a parking is: full, closed or number of free places which are available



Data on road safety-related minimum universal traffic information on the core and comprehensive trans-European network for roads and other motorways[18]

Figure 20: Temporary slippery road on the core and comprehensive TEN-T for roads and other motorways

- In Slovakia data available only for winter, i.e. 1.11. – 31.3.



[18] - For Austria: only data on ASFINAG-managed network.
- For Cyprus: will be implemented using video-analytics tool in 2026.

Figure 21: Animal, people, obstacles, debris on the road on the core and comprehensive TEN-T for roads and other motorways

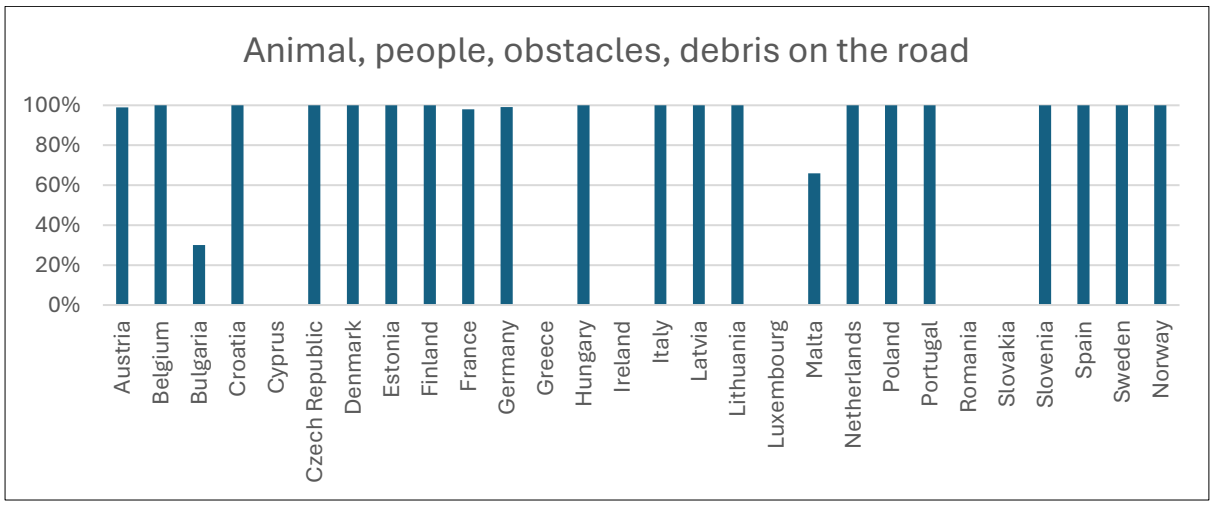


Figure 22: Unprotected accident area on the core and comprehensive TEN-T for roads and other motorways

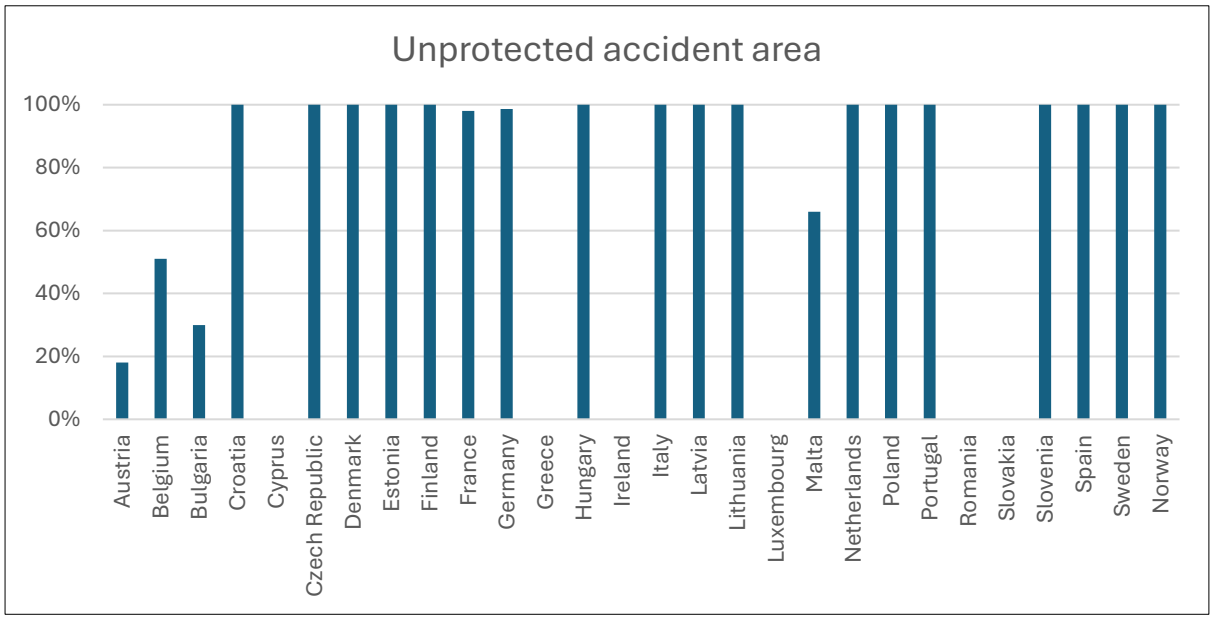


Figure 23: Short-term road works on the core and comprehensive TEN-T for roads and other motorways

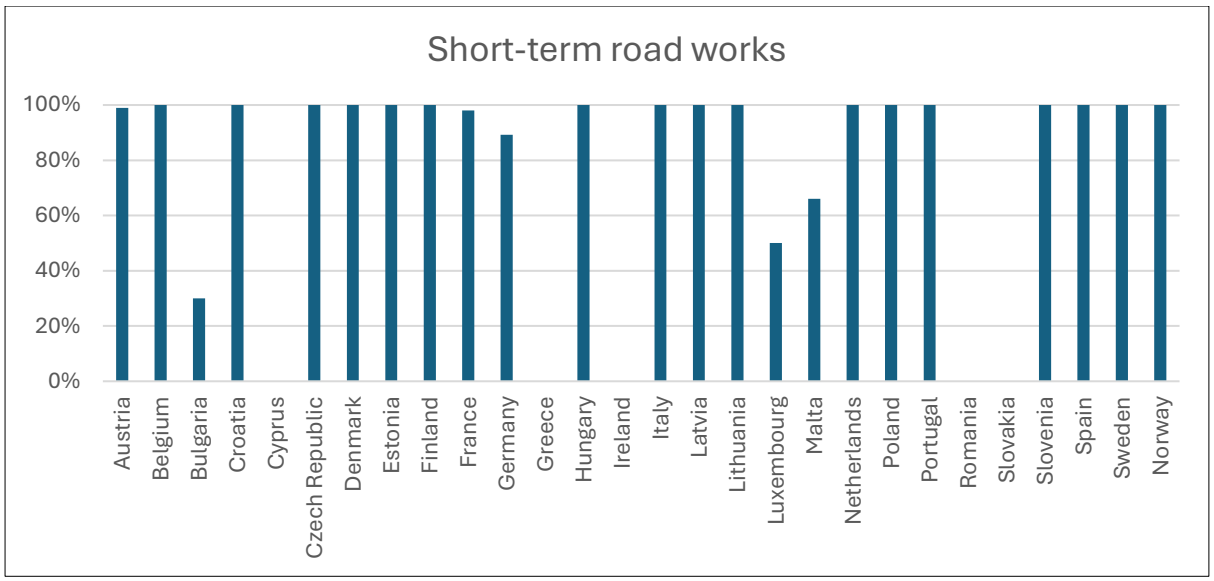


Figure 24: Wrong-way driver on the core and comprehensive TEN-T for roads and other motorways

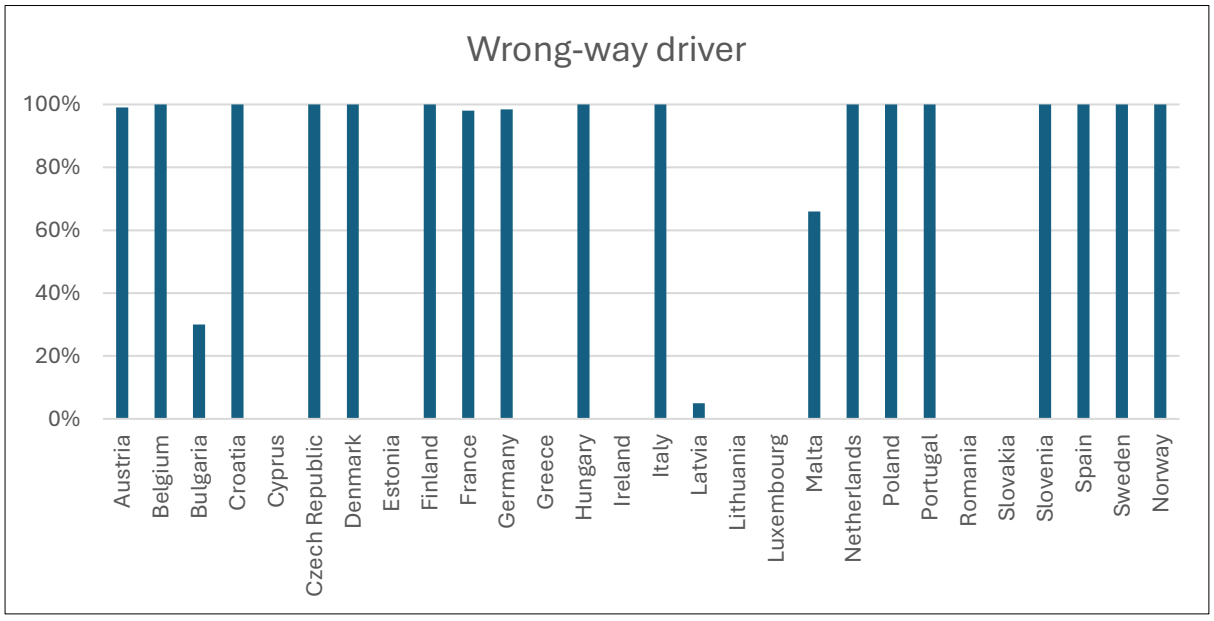


Figure 25: Unmanaged blockage of a road on the core and comprehensive TEN-T for roads and other motorways

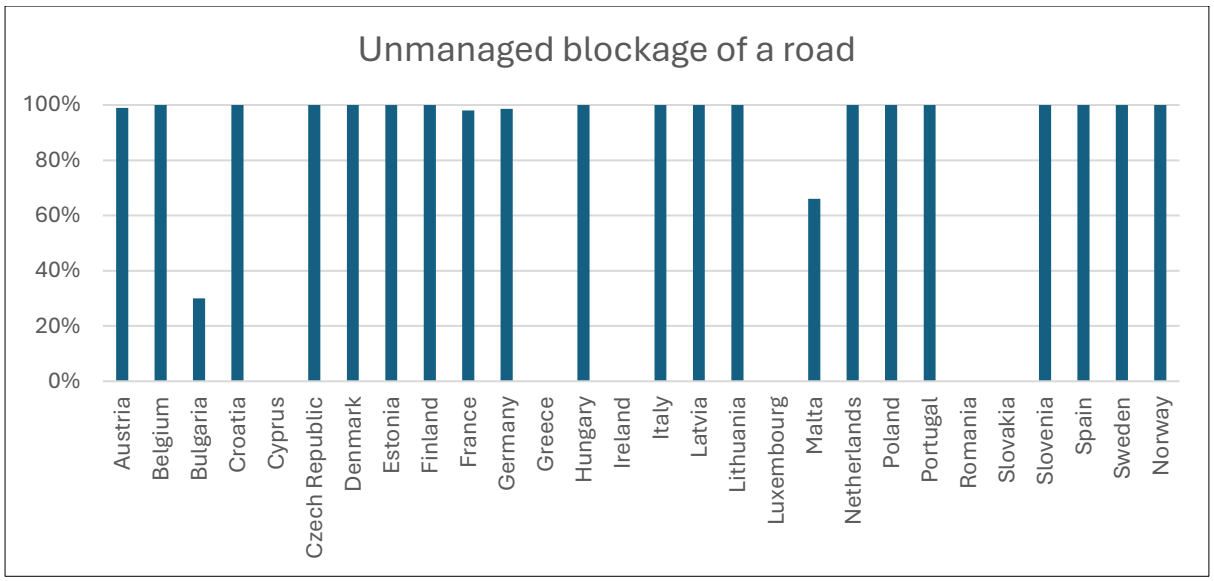


Figure 26: Reduced visibility on the core and comprehensive TEN-T for roads and other motorways

- In Slovakia data available only for winter, i.e. 1.11. – 31.3.

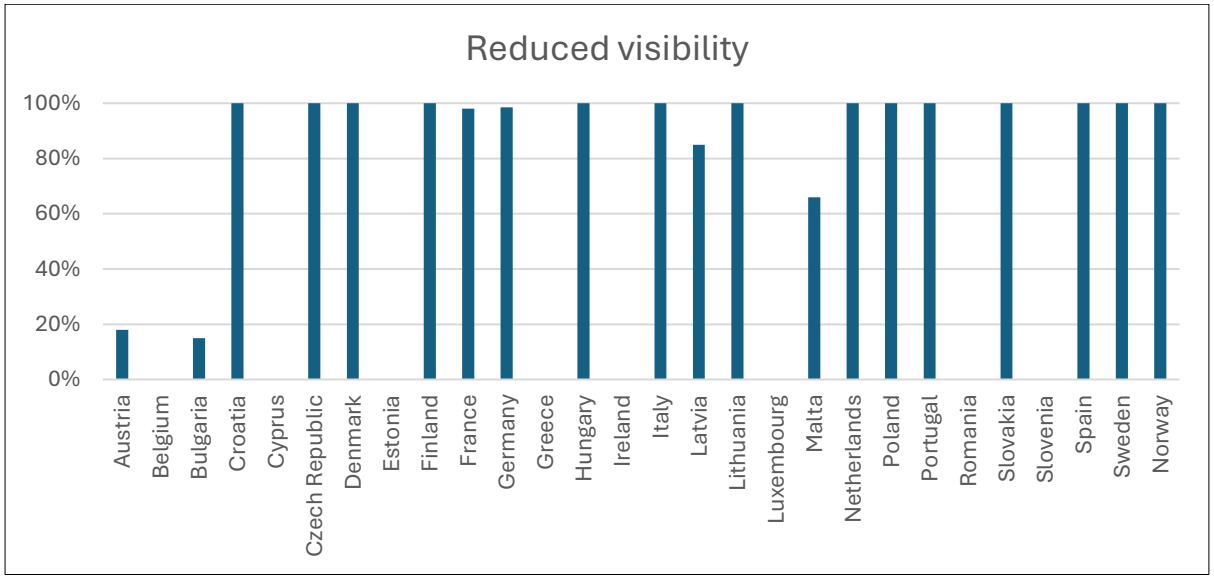
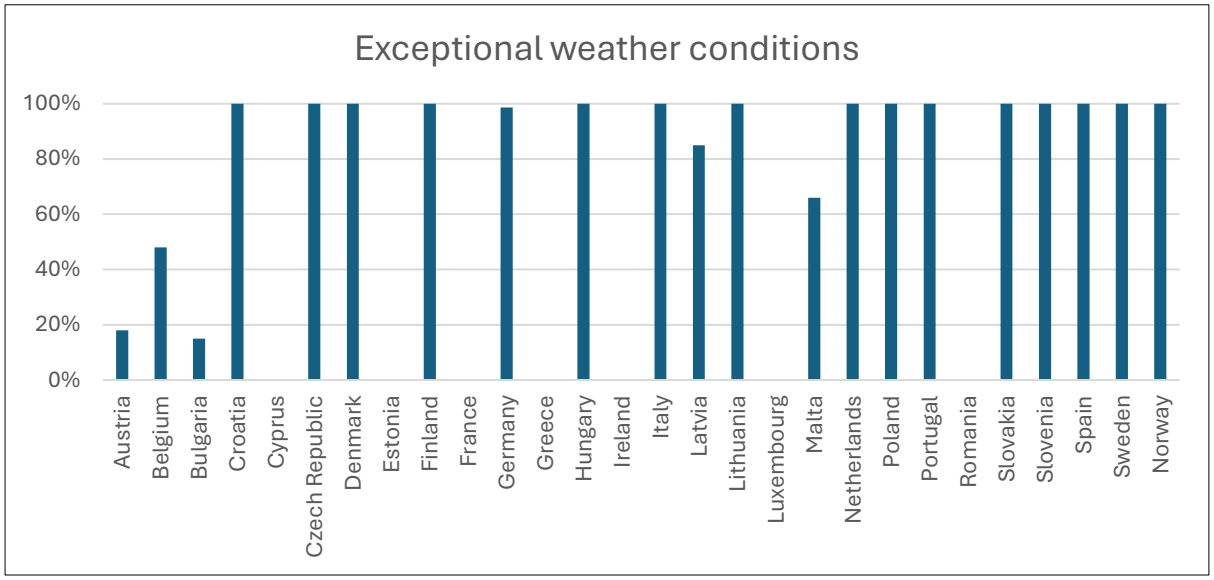


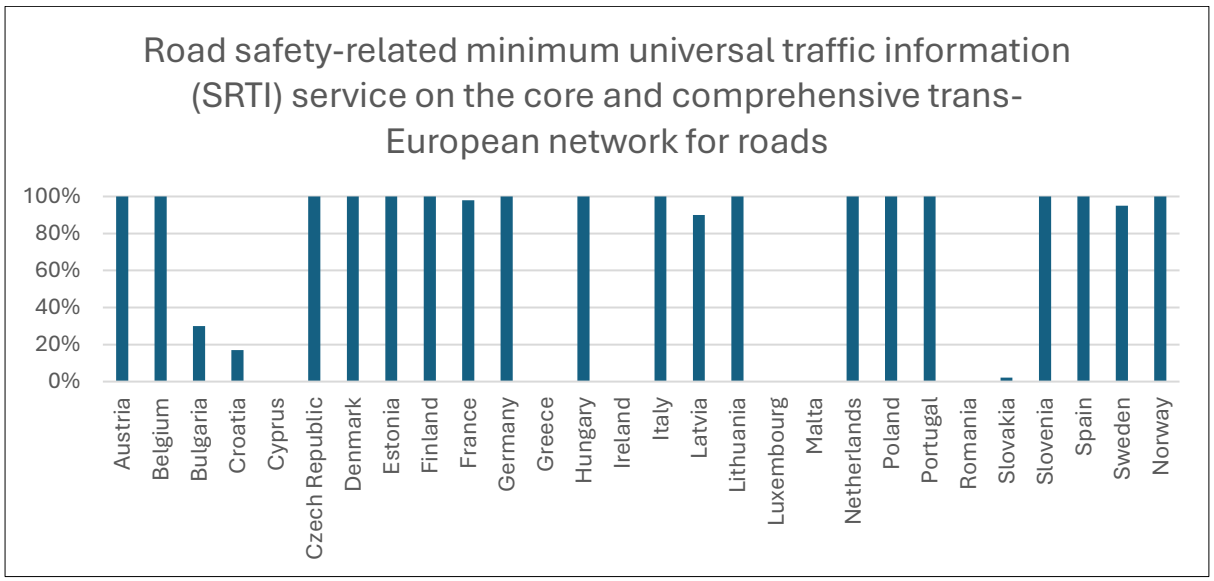
Figure 27: Exceptional weather conditions on the core and comprehensive TEN-T for roads and other motorways

- In Slovakia data available only for winter, i.e. 1.11. – 31.3.



Road safety-related minimum universal traffic information services on the core and comprehensive trans-European network for roads

Figure 28: Road safety-related minimum universal traffic information (SRTI) service on the core and comprehensive trans-European network for roads



2.4. Priority area IV: ITS services for cooperative, connected and automated mobility

Member States reported numerous and varied projects and initiatives related to C-ITS (cooperative ITS). Key aspects include field implementation, integration, communication protocols and automation readiness, supported by national and European contributions and based on common specifications. Despite the European Parliament and the Council's rejection of the Delegated Regulation on C-ITS specifications in 2019, preparatory studies and pilots were launched in many Member States and resulted in the deployment of operational services in several countries, often following a hybrid approach (WLAN/ITS-G5 and mobile communications), driven by collaborative projects that support harmonisation and large-scale network development.

The pilots and deployments relate to Day-1 and Day-1.5 services, i.e. services focusing on exchanging information to improve foresighted driving, which include SRTI information. It should be noted that the definition of C-ITS as established in the amended ITS Directive led some Member States to conclude that their services could no longer be considered as C-ITS services, as they were not based on secured and trusted messages.

The operational services, based on common specifications, including the EU C-ITS security credential management system currently managed by the Joint Research Centre, require the deployment of C-ITS road-side units (RSUs) and, in some Member States, such as Austria, the Czech Republic and Germany, numerous warning trailers and emergency or maintenance vehicles, as well as public transport vehicles (more than 4 200 on-board units registered with authorities)[19]. Cellular-based C-ITS services were also reported, complementing ITS-G5 based C-ITS services.

There are currently around 5 900 deployed C-ITS RSUs (including 3 900 on the TEN-T network), covering 32 700 km of the TEN-T network (including 12 000 km covered by cellular-based C-ITS services only)[20]. The location of RSUs and the coverage of cellular-based C-ITS services can be found on the TENtec map viewer.

Many Member States reported participation in the C-Roads platform[21], which groups 16 Member States deploying C-ITS, as well as Norway, the United Kingdom and associated members from inside and outside the EU. The platform aims to ensure harmonisation and interoperability of all C-ITS pilots and deployments in the EU, and supports many national, and in some cases multi-country, projects co-funded by the CEF. The platform is supported by the recent C-Roads Extended project (2024-2027) that should ensure that existing systems evolve towards Day-2 services that improve service quality and share perception and awareness information, and towards automation readiness.

ITS corridor projects co-funded by the CEF such as InterCor, MERIDIAN, MATIS, MATIS2, VERKKO and SCALE also allow for the harmonised deployment of C-ITS services, and their integration with other ITS services. Member States have also reported integrating C-ITS data streams into the NAPs, and highlighted the need to align with the common European mobility data space in the future.

[19] Source: C-ROADS January 2026.
[20] Source: C-ROADS January 2026.
[21] https://www.c-roads.eu/platform.html.

While priority area IV is not strictly speaking focused on automated driving, meaning that there is a lack of connectivity and infrastructure support, various research and pilot projects on automated driving have also been reported by the Member States. Those projects aim to reap the benefits of C-ITS to support automated driving in challenging situations and bridge gaps in the operational design domain.

3. Key performance indicators (KPIs)

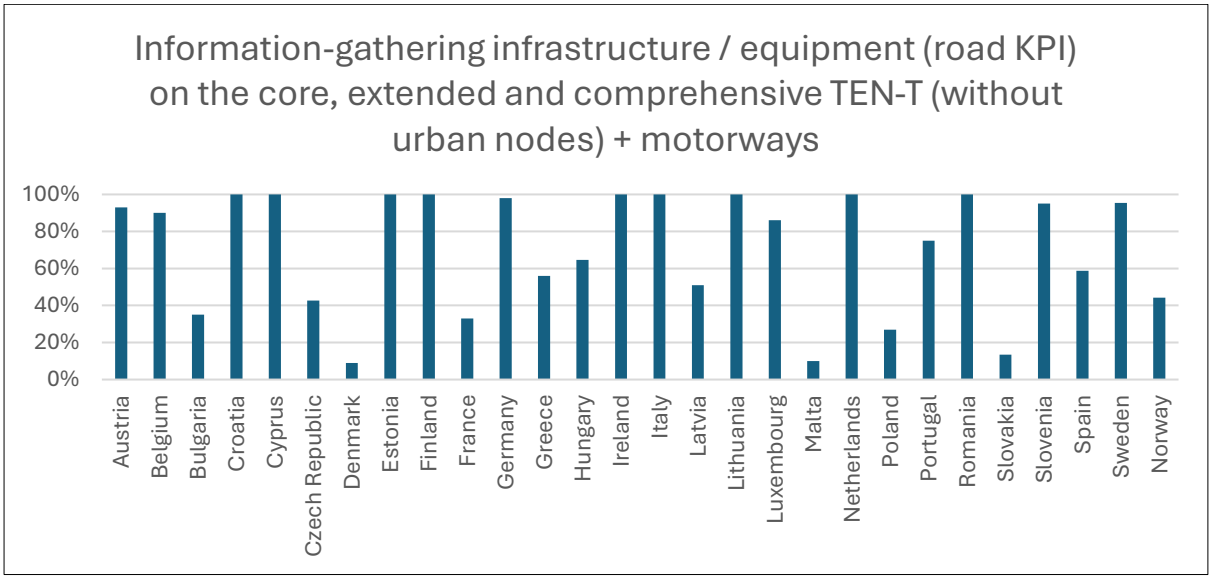
The purpose of these KPIs is not to compare the situation between Member States, which may depend on many factors such as density of population, network or traffic, but to understand the changes and improvements between two reports.

3.1. Deployment KPIs

The following diagrams illustrate the KPIs for the deployment of ITS equipment, infrastructure and services, defined in Commission Implementing Decision (EU) 2025/264 of 11 November 2024 laying down the template including KPIs for reporting by the Member States under Directive 2010/40/EU of the European Parliament and of the Council[22].

Figure 29: Information-gathering infrastructure / equipment (road KPI) on the core, extended and comprehensive TEN-T (without urban nodes) + motorways

- Only services others than road weather monitoring were considered, and maximum percentage of deployment was retained.
- Denmark: also 100% road weather monitoring.
- Germany: 51% of stationary sensors, 98% of vehicle data.
- Netherlands: *Traffic monitoring, 100%; * Weather environmental conditions monitoring, 100%.
- Norway: several types of services are deployed, with a maximum coverage of 44.3% for fixed traffic-monitoring information-gathering infrastructure (15.8% for camera-based traffic monitoring).
- Portugal: 75% CCTV coverage (100% in tunnels) and 100% road weather monitoring.
- Romania: also video surveillance, 13.85%.



[22] OJ L, 2025/264, 10.2.2025, ELI: http://data.europa.eu/eli/dec_impl/2025/264/oj.

Figure 30: Incident detection (road KPI) on the core, extended and comprehensive TEN-T (without urban nodes) + motorways

- Denmark: also automatic incident detection: 0.5%.
- Portugal: 75% CCTV coverage (+ 100% automatic incident detection system in tunnels).
- Romania: also automatic incident detection: 13.85%.

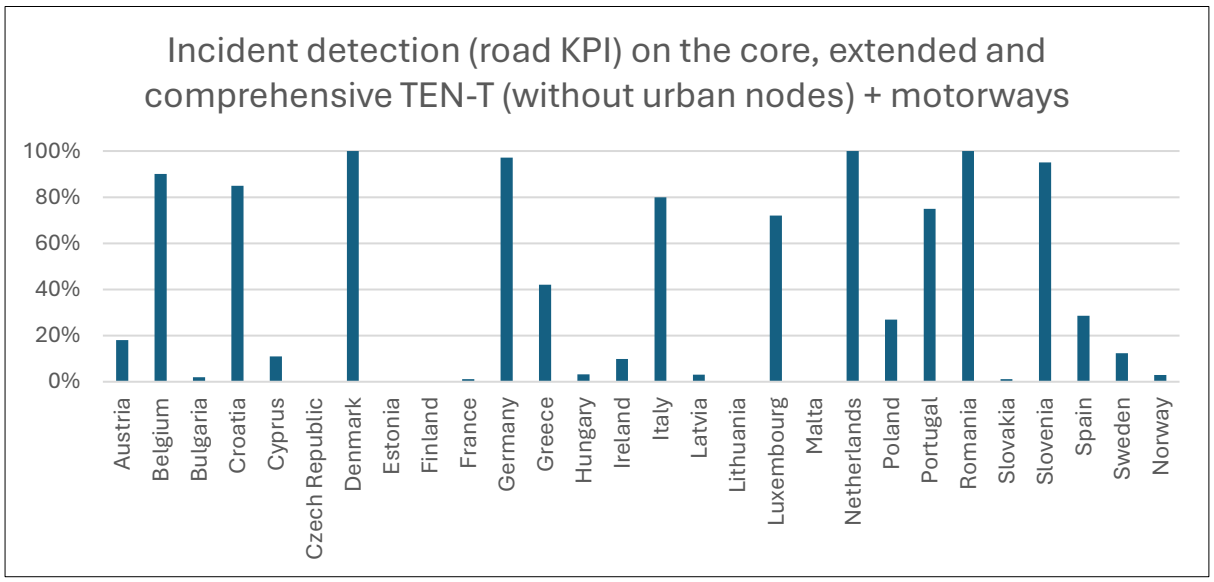


Figure 31: Traffic management and traffic control measures (road KPI) on the core, extended and comprehensive TEN-T (without urban nodes) + motorways

- Portugal: 80%, using VMS (variable message signs) across the network (+ specific measures for tunnels).
- Slovenia: missing data.

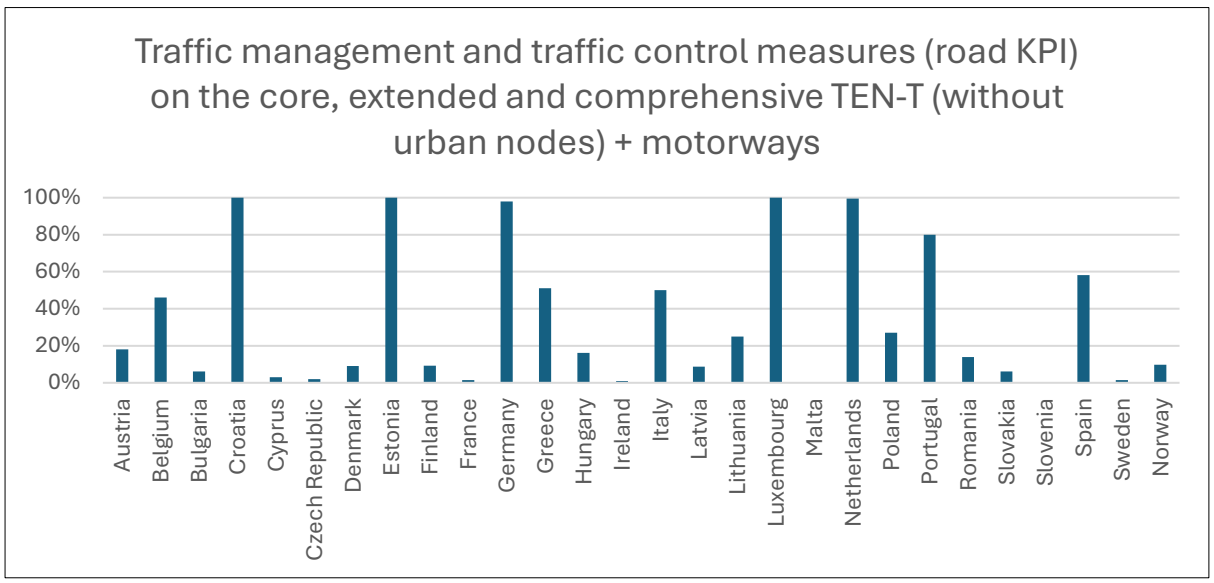


Figure 32: Cooperative-ITS services and applications (road KPI) on the core, extended and comprehensive TEN-T (without urban nodes) + motorways

- Should be based on the definition of C-ITS in the revised ITS Directive: 'exchange of secured and trusted messages'; however, this diagram also includes some deployment via cellular communication.
- Several reports indicated pilots, but reported 0%.
- Belgium: in Wallonia, 100% cellular-based paid service in partnership with private service provider; in Flanders 100% cellular-based.
- Slovenia: Day-1 services – full deployment (40% for RSUs, otherwise LTE).

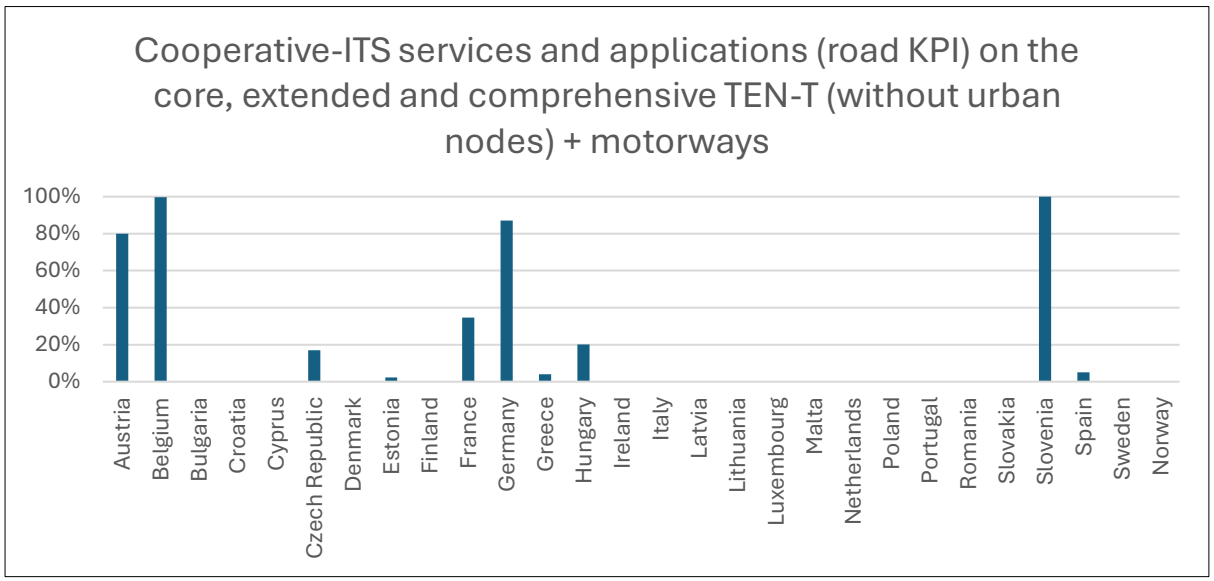


Figure 33: Real-time traffic information (road KPI) on the core, extended and comprehensive TEN-T (without urban nodes) + motorways

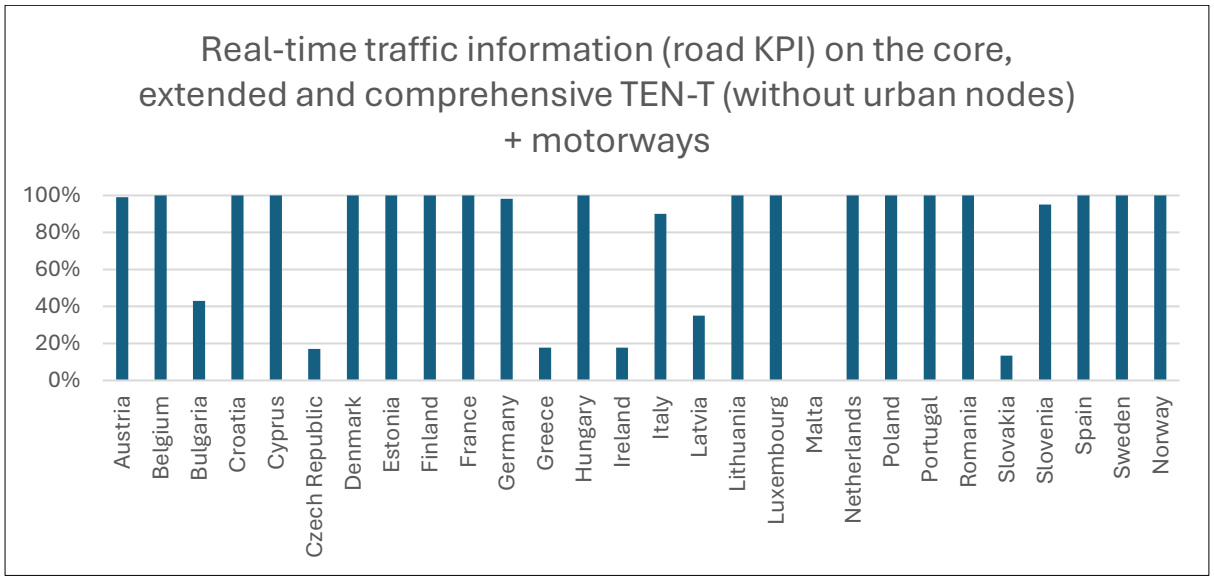


Figure 34: Dynamic travel information (multimodal KPI) - % length on the core, extended and comprehensive TEN-T (without urban nodes) + motorways

- Finland: 100% for rail, 17.3% for bus.
- Germany: 100% for rail.
- Ireland: 100% for rail, 5% for bus.
- Portugal: 100% for rail and bus (coach).
- Spain: 29% for core TEN-T, 16% for comprehensive TEN-T, 18% for motorways.
- Sweden: 100% for rail, 94.1% for bus.

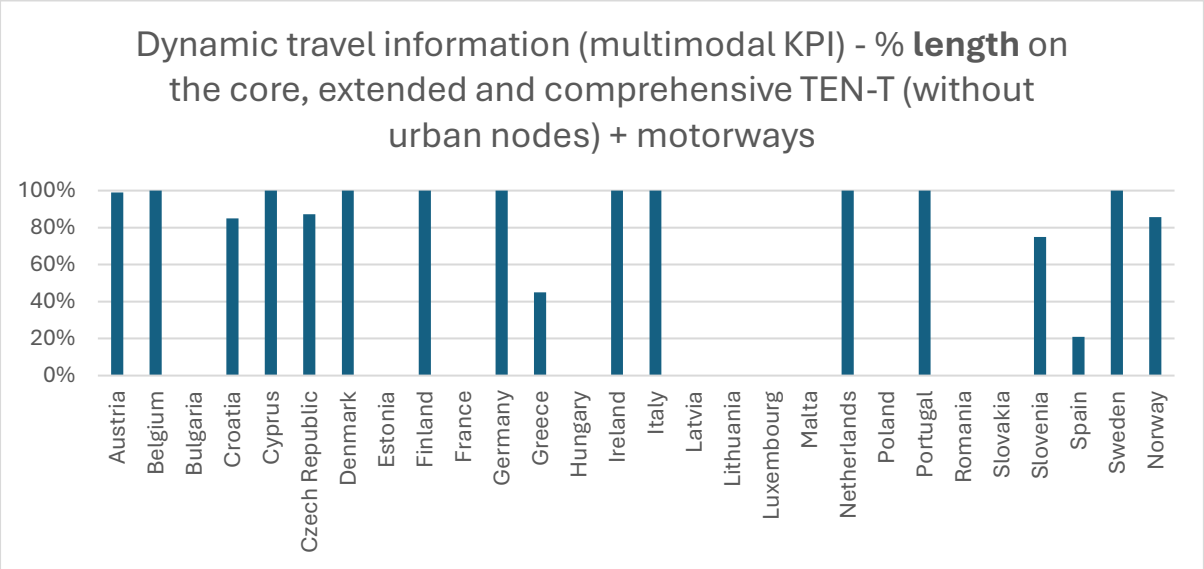


Figure 35: Dynamic travel information (multimodal KPI) - % nodes on the core, extended and comprehensive TEN-T (without urban nodes) + motorways

- General comment: often no distinction between 0% and 'no information'. It seems that information is lacking on which nodes are covered.
- Finland: 100% for rail, 81.8% for bus.
- Germany: 100% for rail, 55% for local public transport.
- Portugal: 100% for rail, no data yet for bus.
- Ireland: 100% for rail, 5% for bus.

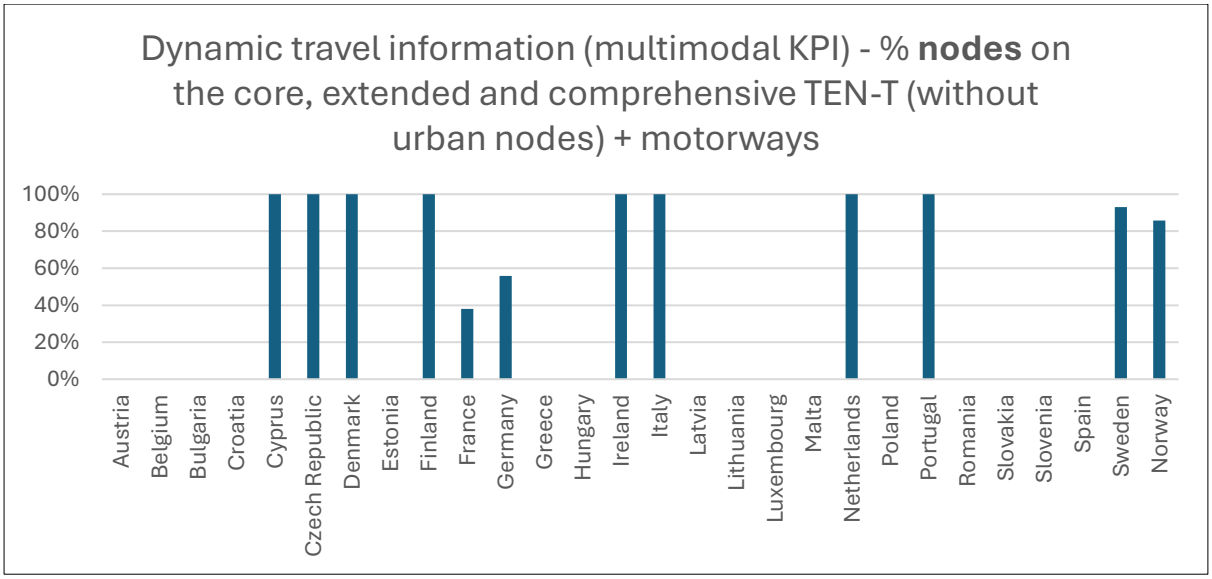


Figure 36: Freight information (multimodal if possible or road KPI) - % length on the core, extended and comprehensive TEN-T (without urban nodes) + motorways

- General comment: no distinction between 0% and 'no information'. It seems that information is lacking on which services are effectively deployed, so there may be more services deployed than indicated.
- Germany: static information on public rest areas on motorways.

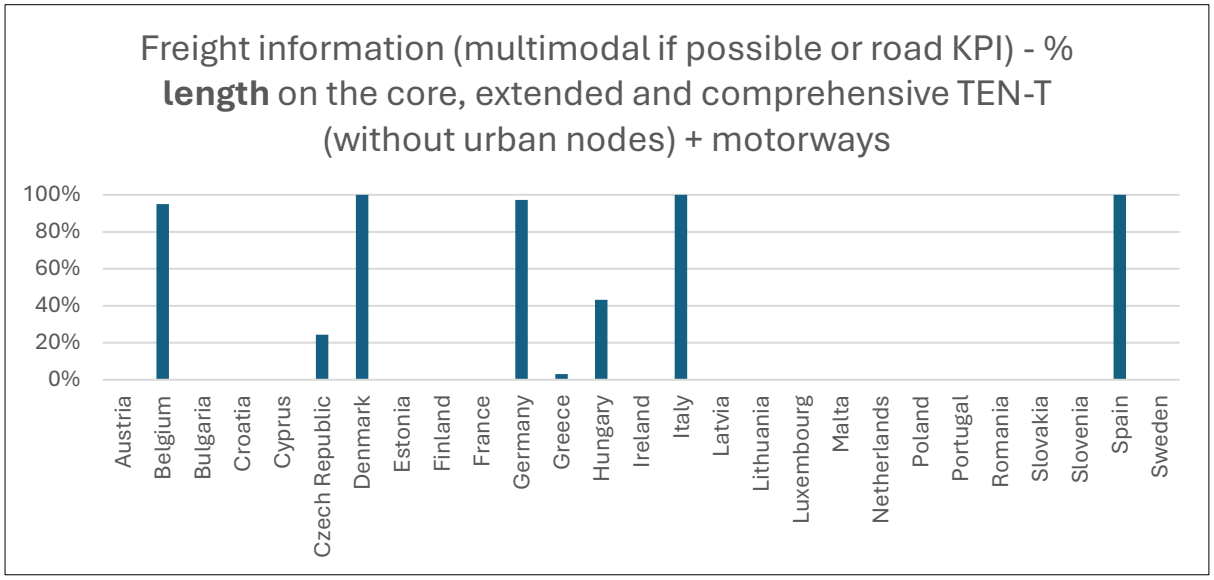
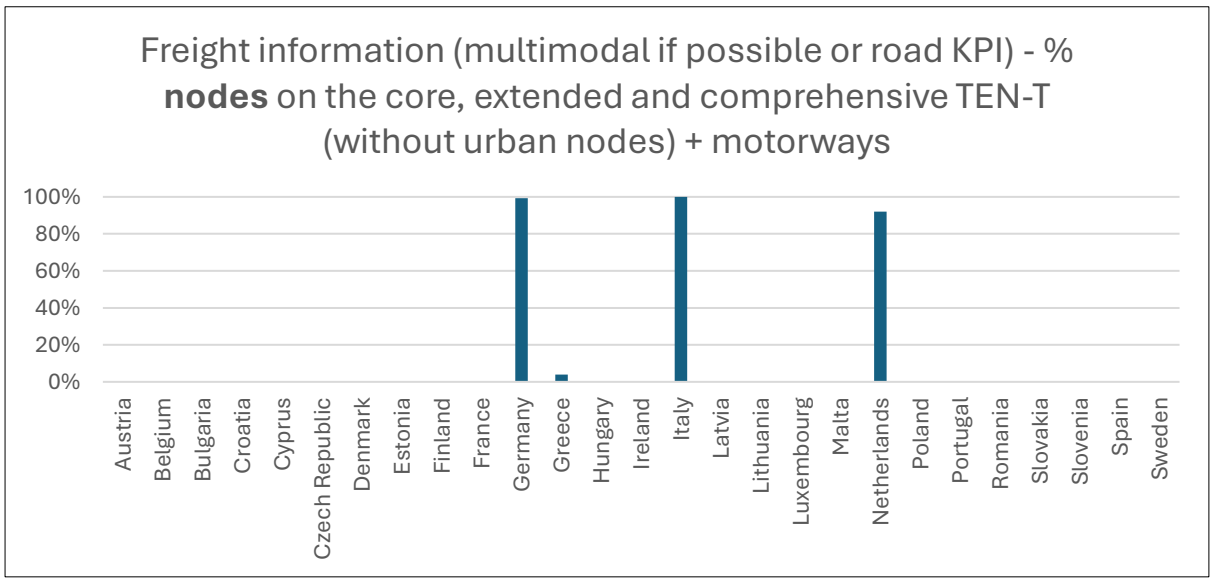


Figure 37: Freight information (multimodal if possible or road KPI) - % nodes on the core, extended and comprehensive TEN-T (without urban nodes) + motorways

- General comment: no distinction between 0% and 'no information'. It seems that information is lacking on which services are effectively deployed, so there may be more services deployed than indicated.
- Germany: static information on public rest areas on motorways.
- Netherlands: static information, 92%; *dynamic information, 2%.



3.2. Benefit KPIs

Reporting on benefit KPIs was optional in 2025; nevertheless, a few Member States provided useful figures, mostly for the TEN-T road network and motorways.

On the **change in travel time** (before/after deployment or improvement of ITS), two Member States reported a modest reduction in travel time (-0.6% for Finland and -1.1% for Latvia). Greece reported a 10% reduction for East Attica (from 41 to 37 minutes) attributable to the implementation of ITS technologies that improved traffic management and user information, but 0% on a longer 135-minute stretch (Aegean motorway). Italy reported an approximative 20% reduction in travel time.

Poland reported considerable improvements in several urban nodes: a 9% reduction for collective transport and 19.5% for all vehicles in Gdynia, a reduction of at least 15% in Katowice, and an impressive 39% reduction in journey time in Tarnów (from 42 to 25 minutes).

Slovenia reported a 50% reduction in incident detection time (from 6 to 3 minutes) between 2018 and 2025, as well as a 67% reduction in information latency to users (from 3 minutes to 1).

The Netherlands did not have specific data on the impact of ITS on change in travel time, but reported a considerable increase in the severity of traffic congestion over the previous two years, primarily due to roadworks and rush hour congestion. The Netherlands also provided information on the results of a survey on the perceived effects of digital travel and route information, with 70% of respondents reporting a perceived reduction in travel time and 29% reporting having found a parking spot earlier.

On the **change in the number of road crashes resulting in death or injury** (before/after deployment or improvement of ITS), the data were limited, and several reports mentioned the difficulty of isolating the effects of the deployment of ITS from other causes. However, some Member States provided quite detailed information.

Finland reported an estimated 20.6% reduction in the number of fatal and injury accidents on the TERN and other motorways, with 678 crashes before and 538 crashes after implementation of ITS. This takes into account the effects of: (i) road traffic management and information systems (4.4% reduction on the TERN and other motorways), (ii) automated speed enforcement systems on road links and junctions as well as signal control at junctions (7.2% reduction in the number of fatal and injury crashes on the network studied); and (iii) driver support systems in vehicles, which decreased the number of fatal and injury crashes by around 10% and fatal crashes alone by more than 18%.

Italy estimated the reduction in road crashes to be between 10% and 15%.

Latvia reported a 22.8% decrease in the number of crashes between 2023 and 2024 (from 771 to 595).

While Lithuania did not have general figures for ITS, it reported that average speed measurement systems had a very positive impact, with an average reduction of around 40% in the number of injuries and 60% in the number of fatalities.

Slovenia reported a 50% decrease in the number of fatalities on the TERN between 2019 and 2024 (from 14 to 7), but a 9% increase for serious injuries for the same period (from 44 to 48).

Spain reported a contrasting picture depending on the type of network: on the interurban network, there was first a 12% decrease in the number of crashes between 2018 and 2022 followed by a 6% increase between 2022 and 2023 (i.e. an overall 6.7% decrease over the period 2018-2023), while for urban roads the country reported a 2.4% increase for the period 2018-2023.

The **change in traffic-CO_2 emissions** was also less documented. This was to be expected because of the difficulty of isolating the impact of ITS from other factors influencing emission levels, including the electrification of road transport. Nevertheless, some reports contained useful information.

Finland provided an overall estimate of a 0.7% reduction in CO_2 emissions over 5 248 km of the TERN and other motorways, divided into a 0.31% direct reduction and a 0.38% indirect reduction due to a decrease in the number of crashes.

Italy estimated that ITS reduces pollutant emissions by 10%.

Latvia estimated a 4% reduction based on an indirect assessment taking into account traffic flow improvements and the effect of the upgraded infrastructure on the main national roads.

Slovenia also cited a 4% reduction in average fuel consumption on motorways between 2018 and 2025.

Poland mentioned a pilot project in Katowice, which led to a GHG emissions reduction of 4 tonnes.

Sweden estimated the effects of the congestion tax in both Stockholm and Gothenburg to be 0.75% of the national transport emissions in 2023 (95 000 tonnes out of 12.7 million tonnes). For Automatic Traffic Safety Control, the estimated reduction in CO_2 emissions in 2023 was 1 556 tonnes.

3.3. Financial KPIs

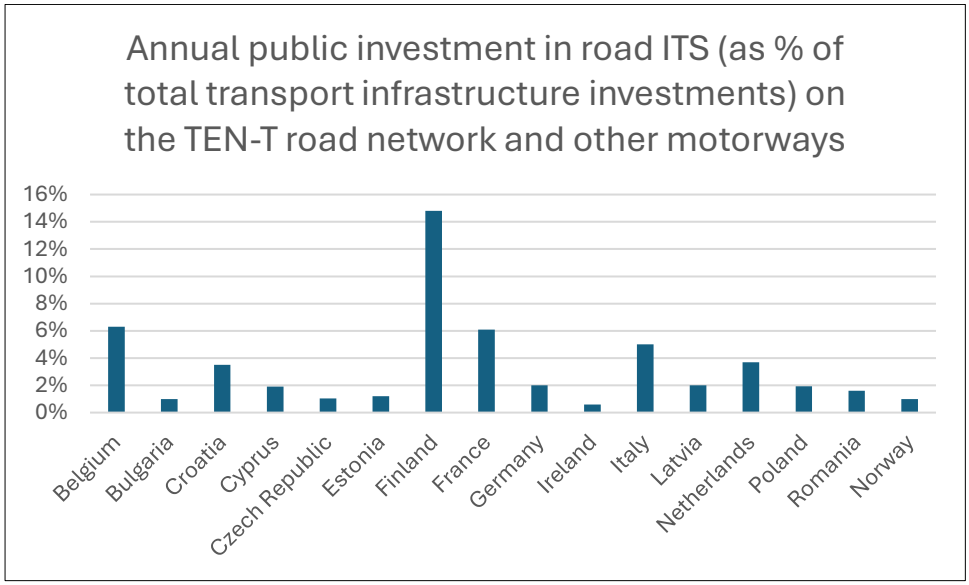
Although reporting financial KPIs was mandatory in 2025 for the TEN-T road network and other motorways, not all Member States were able to provide figures for the two financial KPIs on annual public investment and annual public operating and maintenance costs of road ITS, highlighting the difficulty of isolating ITS from overall road investment and maintenance costs, which in some cases also led to very low maintenance costs for ITS.

Conversely, some reports only included investment amounts for ITS projects without providing figures for overall road investments, or could not separate investments from maintenance. Figures reported were also quite uneven over time, often reflecting the ongoing deployment or recent completion of projects which impacted the investment values between two consecutive years, but also including operating and maintenance costs.

With all the above-mentioned caveats, and with the general recommendation to interpret these figures with caution and to consult the national reports for more accurate information on a specific Member State, as the figures were also provided for different years (usually 2023 or 2024), the information provided nevertheless made it possible to produce the following diagrams covering all Member States for which such representation was feasible.

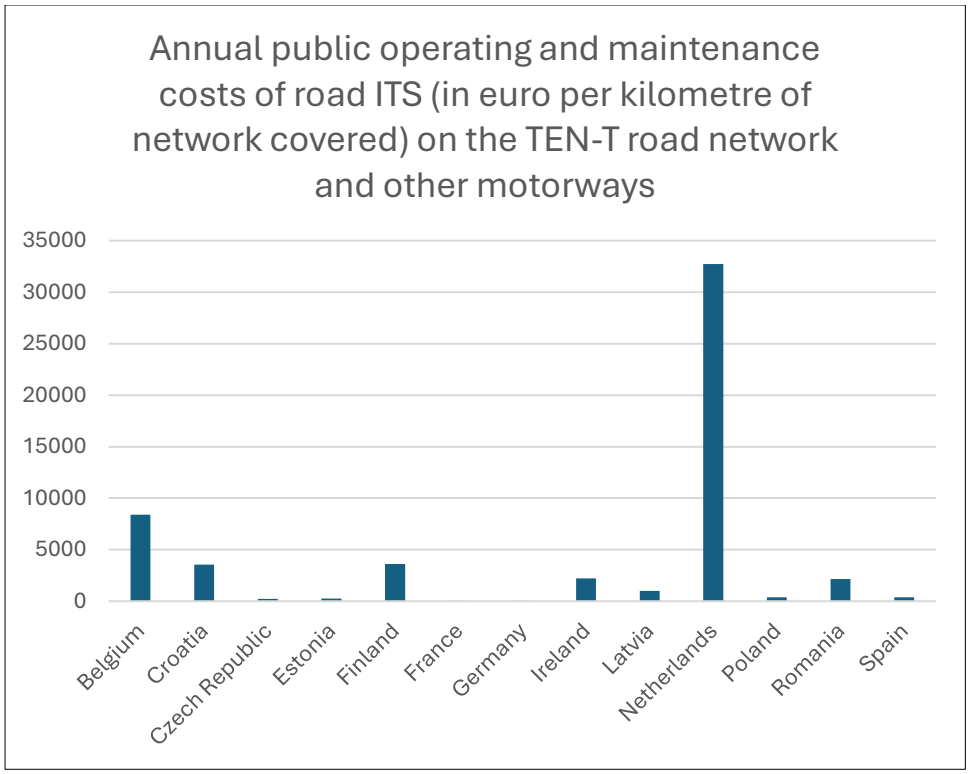
Annual public investment in road ITS on the TEN-T road network and other motorways

Figure 38: Annual public investment in road ITS (as % of total transport infrastructure investments) on the TEN-T road network and other motorways



Annual public operating and maintenance costs of road ITS on the TEN-T road network and other motorways

Figure 39: Annual public operating and maintenance costs of road ITS (in euro per kilometre of network covered) on the TEN-T road network and other motorways



4. Conclusion

The summary comprehensively analyses national ITS activities and projects in Member States as per Article 17(1) of Directive 2010/40/EU. It highlights the varied deployment of ITS services across Europe, with significant progress observed in all priority areas. However, this advancement is tempered by challenges, particularly regarding data availability and accessibility and compliance assessment, suggesting that further enforcement measures may be needed to ensure compliance with legal requirements.

It also underscores significant improvements in travel time and crash reduction due to ITS deployment in several Member States. The environmental benefits of ITS, such as CO_2 emission reductions, were also less documented but noted by several countries. However, the difficulty of isolating ITS impacts from other factors, such as road electrification, remains a challenge. On the financial side as well, the analysis acknowledges the struggle to isolate ITS investment and maintenance figures from overall road budgets and underscores the uneven nature of these figures due to ongoing projects.

The role of multi-country deployment projects co-funded by the CEF and of initiatives like NAPCORE(-X) in improving NAP functionalities was praised, with the growing use of common EU standards marking a significant step towards better data quality and harmonisation. Despite this progress, the persistent gaps in the availability and accessibility of data via NAPs necessitate continued effort and coordination among Member States. Overall, this analysis highlights positive trends in ITS deployment and benefits, while also underscoring areas for continued focus and improvement.