

A review of the EU Directive on Intelligent Transport Systems for road and transport authorities

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CROW-KpVV

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ITS-Directive

A review of the EU Directive
on Intelligent Transport Systems
for road and transport authorities

April 2026

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Reading guide

The English version of the legislation is applicable. Translations have been made available for each Member State for ease of reading. This document attempts to explain the scope of the ITS-Directive, bearing in mind that it still needs to be transposed into national legislation. This document is primarily intended to outline the tasks facing road and transport authorities.

In this context, it should be noted that the English version of the ITS-Directive uses the term 'Primary road' with regard to geographical scope, which is translated into Dutch in the ITS-Directive as 'Hoofdweg' (main road). This translation to 'hoofdweg' may cause confusion regarding the applicable geographical scope. This is because the Dutch government has formally designated all roads, other than private roads, as the 'primary' road network. The use of the term 'hoofdweg' may give the impression that it only concerns arterial roads and connecting roads, whereas the application concerns the 'primary' road network and thus the entire road network in the Netherlands.

It is for this reason that we have chosen to use the term 'primary road network' in this publication when it is intended in the context of the obligations arising from the ITS-Directive.

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Part 1:

**A brief explanation of the ITS-Directive
and the 2023 amendment**

1 Introduction

1.1 Why is the ITS-Directive important?

The ITS-Directive has been in place since 2010. With the recent addition to it, we are taking another step forward in regulations relating to the harmonised implementation of Intelligent Transport Systems (ITS) in Europe. The ITS-Directive sets out the scope of the European Commission's powers with regard to the application of ITS. This mainly concerns defining the substantive scope of these powers in the form of priority areas and making the data necessary for the proper functioning of ITS available and accessible on a mandatory basis. Further specifications exist for each priority area or are planned for the near future.

Good travel information and navigation services should be based on accurate, correct and complete data, supplemented with the current situation. This makes traffic safer, more efficient and therefore more sustainable (less searching behaviour, less distraction, more efficiency and fewer emissions from unnecessary kilometres) and is in line with the government's duty to keep citizens well informed. It is also in the public interest to include socially desirable route recommendations by integrating digital traffic circulation plans into these services. This improves the quality of life in the physical environment.

It is important to improve safe parking for lorries and commercial vehicles. This will reduce unsafe situations for drivers and their loads and reduce illegal parking under pressure from the driving hours regulation. This is because rest periods can be planned more effectively thanks to better parking information services. Traffic will become safer thanks to better information for drivers about dangerous situations and incidents, enabling them to respond appropriately. Travelling by public and shared transport also becomes more attractive and accessible because relevant travel information is complete and up to date and it is known which facilities are available where (entrances, lifts, toilets, etc.). This and other information should lead to accessible chain mobility, not only locally, regionally or nationally, but also across national borders.

Better travel information is an important step towards the use of more sustainable modes of transport. Collecting and making available complete, high-quality data is essential for travel information services to function properly. This requires intensive public-private cooperation, with road and transport authorities playing a crucial role in jointly determining whether the data is of sufficient quality.

The ITS-Directive can be seen as a legal framework with various obligations for public and private organisations in the mobility chain. However, when we look at the actual implementation of services such as ISA, multimodal travel apps, and C-ITS, the number of policy choices to be made is considerably greater, with local components often playing a substantial role. It is therefore wise for government authorities to develop a vision on Smart Mobility in general and on data in particular. The obligations under the ITS-Directive represent the lowest level: limited to the ambition to implement the obligations. A more future-proof policy looks beyond the obligations alone and sets out guidelines for one or more desired developments. Ambitious policy helps with development and testing and plans and implements desired services. This vanguard largely determines the ultimate direction and thus the future. The competencies, knowledge and capacities available to a road or transport authority often determine the degree of ambition.

Finally, when working with data, it is important to comply with privacy and security regulations. It would be going too far to discuss this in detail in this publication, but this information is readily available via the Ladder of Smart mobility;¹ Dutch. This ladder also provides more information about the aforementioned ambition levels.

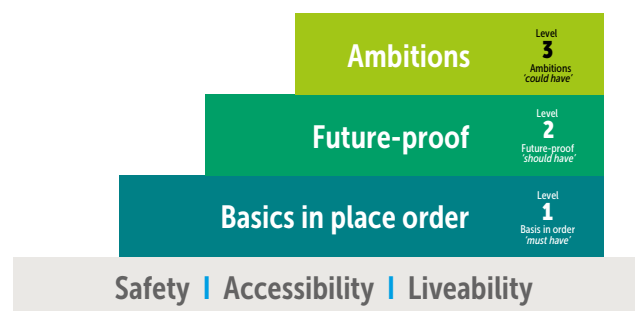


Figure 1. The three ambition levels from the CROW Ladder of Smart Mobility

1.2 What is the Directive about?

Intelligent transport systems (ITS) are applications in road traffic that use information and communication technologies. The ITS-Directive provides the following definition:

ITS are systems in which information and communication technologies are applied in the field of road transport, including infrastructure, vehicles and users, and in traffic management and mobility management, as well as for interfaces with other modes of transport.

¹ website is in Dutch but can easily be translated in English

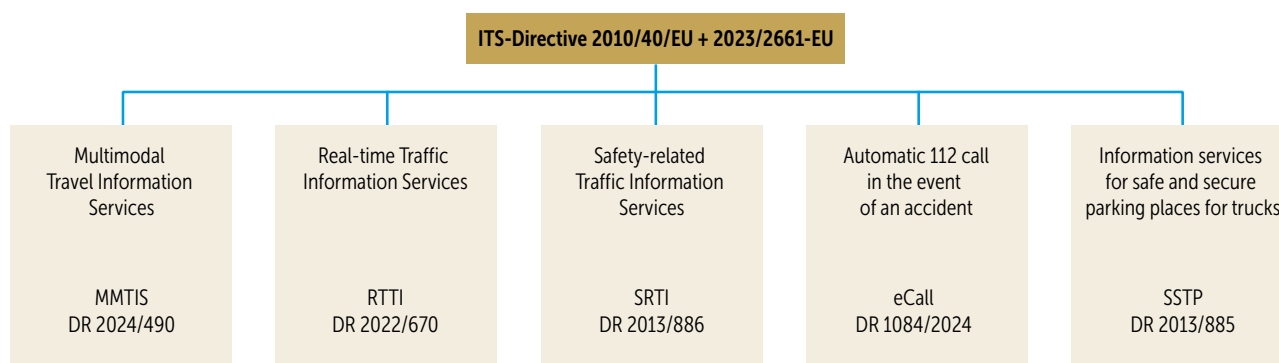


Figure 2. The ITS-Directive with additional regulations from the European Commission

The applications of these technologies will only become truly useful once sufficient scale and scope have been achieved and systems are interoperable within the EU. To accelerate this transition, a Directive supplemented by various regulations (delegated regulations) has been adopted:

■ **ITS-Directive:**

The ITS-Directive requires EU Member States to take measures to promote the implementation of intelligent transport systems (ITS) within their territory. These measures include establishing common European specifications to promote interoperability, introducing ITS services and ensuring the availability of crucial road, travel and traffic data in digital form. In addition, the Directive encourages broad cooperation between relevant stakeholders and the establishment of the necessary standards for data exchange.

The ITS-Directive is supplemented by the following regulations:

■ **MMTIS (Multimodal Travel Information Services, DR 2017/1926 and amendment DR 2024/490):**

This regulation obliges transport authorities to make data, such as timetables and bicycle sharing stations, accessible via National Access Points (NAP) in digital form. This promotes the provision of information to travellers, encourages multimodal travel and contributes to lower transport emissions through reduced use of private cars;

■ **RTTI (Real-time Traffic Information Services, DR 2022/670):**

This regulation contains obligations to make traffic-related data, such as infrastructure characteristics and information about road works, accessible via National Access Points (NAP) in digital form. The aim is to provide up-to-date traffic information to vehicle drivers and to establish a public-private playing field under FRAND² conditions.

■ **SRTI (Safety-Related Traffic Information Services, DR 2013/886):**

This regulation contains obligations to make safety-related data, such as wrong-way drivers and dangerous situations on the road, accessible via National Access Points (NAP) in digital form and to offer this to road users free of charge in minimum universal road safety information services.

■ **eCall, DR 1084/2024:**

This regulation regulates the mandatory use of an automatic 112 call in the event of an accident;

■ **SSTP (Information services for safe and secure truck parking areas, DR 2013/885):**

This regulation contains EU-wide agreements for making data on truck parking spaces accessible via National Access Points (NAP) in digital form, with the aim of creating greater transparency for users and facilitating investment within the private sector.

The services and information flows are used in all modes of transport and for interaction between the various modes.

² FRAND conditions: Fair, reasonable and non-discriminatory. For more background information, see:
 – FRAND regulation 2023.0133-EU
 – JRC publication 2015

Regulations	Scope	Modalities								
		bus	tram/metro	train	car	bicycle	walk	ferry services	freight and logistics	shared mobility
ITS-Directive	Promoting the implementation and interoperability of intelligent transport systems	X	X	X	X	X	X	X	X	X
MMTIS-Regulation	Providing integrated travel information to passengers	X	X	X	X	X	X	X	X	X
RTTI-Regulation	Provision of real-time traffic information	X			X				X	
SRTI-Regulation	Providing safety-related information to road users	X			X				X	
eCall-Regulation	An emergency call system that automatically contacts the emergency services in the event of a serious accident, transmitting the location and other relevant data.				X					
SSTP Regulation	Providing information on safe and secure parking areas for trucks, including availability and facilities.								X	

Figure 3. Overview of the focus on modes of transport in ITS regulations.

The ITS-Directive establishes a European legal and binding framework and aims, among other things, to:

- Accelerating the coordinated and effective implementation of ITS-services in Europe;
- Ensuring better coordination, interoperability and continuity within the European Union (cross-border use);
- Improve interaction between the various modes of transport (multimodal chain journey);
- Increasing road safety;
- Reducing emissions of harmful substances (as part of The European Green Deal package)
- Promoting cooperation between Member States and between Member States and ITS-service providers.

1.3 The ITS-Directive in a nutshell

In short, the directive covers the following:

- Intelligent transport systems (ITS) are transport systems that use information technology and communication technology. This includes, for example, journey planners, travel information services, intelligent traffic lights, real-time traffic information, traffic management or vehicle safety applications such as automatic 112 calls and advanced cruise control.
- They are used in all modes of transport and for interaction between those modes.
- The aim of the ITS-Directive is to accelerate and better coordinate the implementation of ITS in order to improve the functioning of the road transport system and optimise interfaces with other modes of transport. This, in turn, should reduce air pollutant and CO₂-emissions from road transport, reduce congestion and improve road safety.
- The ITS-Directive has been established as a legal framework for the orderly implementation of ITS within the European Union. The ITS-Directive mainly contains specifications regarding the scope of the European Commission's right of initiative with regard to ITS (what is it about), while the regulations mainly contain specifications on the application of ITS (how should we do it).
- The revision extends the scope of the ITS-Directive to give travellers access to data from emerging services such as multimodal booking and ticketing apps, as well as to improve communication between vehicles and infrastructure and facilitate automated mobility.
- The revision also requires the collection of 'critical data' and the provision of essential services such as real-time information services to inform drivers about accidents or obstacles on the road. Where possible, data must be anonymised; if this is not possible, personal data collected must be processed in accordance with GDPR rules.

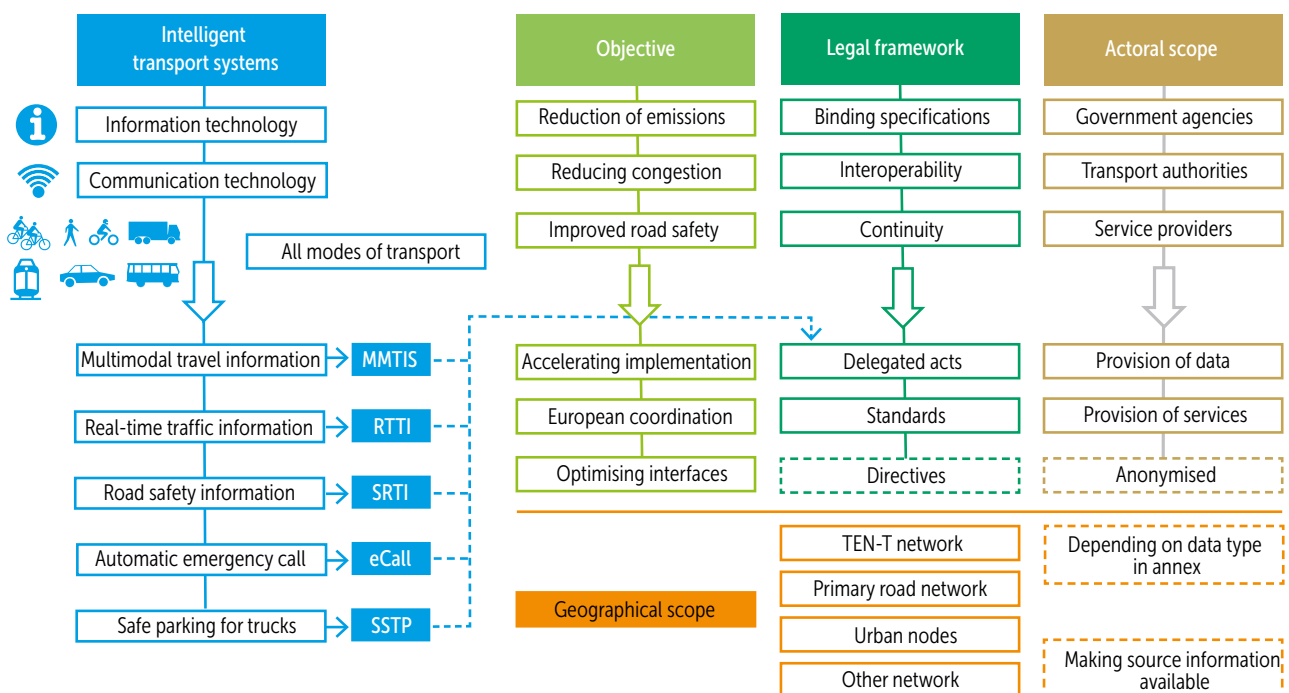


Figure 4. Overview of the ITS-Directive

2 What are we essentially going to do?

In order to support the reduction of emissions, congestion and increase road safety, it is necessary to accelerate the roll-out of EU-wide ITS services. This is in line with the government's policy of keeping citizens well informed and the digital transition (see part 2 for further details).

The following sections describe the essential components of the ITS-Directive, divided into the following topics:

- The substantive and geographical scope (sections 2.1 and 2.2)
- The provisions relating to the availability of data and services (section 2.3)

2.1 The priority areas

The Directive focuses primarily on a number of issues, contained in the so-called priority areas:

Priority area I: ITS services for information and mobility
These are services aimed at providing information to multimodal travellers, such as:

- Multimodal travel information, booking and/or purchasing options for transport services
- Real-time road traffic information and navigation services
- Policy routing (such as traffic circulation plans), traffic regulations and recommended routes, particularly for trucks
- Infrastructure data used for digital maps

Provisions relating to Priority Area I focus on the development of uniform (multimodal) travel information services for travellers. The RTTI and MMTIS regulations then contain specific additional provisions for this priority area. It is important to note that the RTTI and MMTIS regulations focus on making already available data accessible in machine-readable format at the National Access Point (NAP) for the purpose of organising the effective exchange of that data. The ITS-Directive contains provisions relating to making that data digitally available and updating it, so that the data can always be accessed in an up-to-date and complete form on the NAP. However, the provisions in the ITS-Directive concern a different geographical scope than the provisions in the RTTI and MMTIS regulations. This means that, for each data type and each provision, these apply to a specific geographical scope. This scope will be explained later.

Priority area II: ITS services for travel, transport and traffic management

These are services that provide up-to-date travel information, focusing on the current traffic situation, network usage and any disruptions to the network and their management, such as:

- Traffic and incident management services
- Mobility management services
- EU-wide framework for ITS-architecture, intended for the development of services at national, regional or local level.
- ITS-applications for freight logistics

Here too, the focus is on making data available and updating it. In this case, the timeliness of the data is even more important because it focuses on interventions from traffic management. In addition, this involves EU-wide interoperability and continuity of services with a strong multimodal character, which form the basis for the creation of local, interlocal or national services. At present, there are no further specifications in the form of regulations for this priority area.

Priority area III: ITS services for road safety and security

Priority areas I and II already contain elements that relate to road safety to a greater or lesser extent, but priority area III focuses specifically on road safety and in particular on:

- Interoperable Union-wide eCall (automatic 112 emergency calls in the event of accidents)
- Information and reservation services for the safe and secure parking of trucks and commercial vehicles
- Road safety-related minimum universal traffic information services
- Specifications for the safe use of driver assistance information systems.

This concerns the use of data from vehicles in emergencies, interaction with control rooms and the nature of the goods that vehicles are actually carrying at the time of an incident. The provisions for this are set out in the eCall-Regulation. Further provisions for the safe parking of commercial vehicles are set out in the SSTP-Regulation, while further provisions for safety-related information services are set out in the SRTI-Regulation. Also important to note here is that the SSTP and SRTI regulations focus on making already available data accessible in machine-readable format at the National Access Point (NAP) for the purpose of organising the effective exchange of that data. The ITS-Directive contains provisions relating to making that data available digitally and updating it, so that the data is always up to date and fully accessible at the NAP.

In addition, the ITS-Directive requires the availability of traffic information services relating to road safety data, such as reports of wrong-way drivers and exceptional weather conditions. Finally, a number of other actions have been identified, namely:

- safe use of an interface (including mobile phones)
- improving the safety and comfort of vulnerable road users for all relevant ITS applications (insofar as not already regulated elsewhere)
- Integrating advanced driver assistance systems (ADAS) into vehicles and road infrastructure (insofar as this has not already been regulated).
- Assisting in the recovery of stolen goods in logistics or public transport.

At present, there are no further plans to develop specifications for the above matters in these chains.

Priority area IV: ITS services for C-ITS

This priority area focuses on accelerating the roll-out of vehicle digitisation and automation through connectivity with roadside systems:

- Supporting CCAM by developing uniform specifications for connectivity (V2V, I2I and V2I)
- Specifications for C-ITS services
- Specifications for the EU C-ITS management system (Trust domain and certificates)

This involves developing specifications for the standardised exchange of data between vehicles and infrastructure in particular. It also involves developing specifications for warning services to support automated vehicles. The provisions in the ITS-Directive open up the possibility of developing new regulations relating to C-ITS.

Essentially, it is about making relevant mobility data available, accessible, up to date and exchangeable by drawing up EU-wide specifications. These specifications must have an impact. They must make a concrete contribution to solving problems such as congestion, anticipating emergencies and weather phenomena, reducing emissions, improving energy efficiency and promoting safety and security, including for vulnerable road users. This must be done in a cost-effective manner that must lead to continuity of (C)-ITS services in Europe, taking into account the differences in infrastructure at national level.

2.2 Geographical scope

As mentioned above, the geographical scope of the ITS-Directive is often slightly different from that of the regulations. The latter refer to existing data that must be made accessible in a standardised machine-readable format, while the ITS-Directive concerns making relevant data available and keeping it up to date, even if it does not yet exist in a machine-readable format. To make this possible, the process of collecting data will have to be digitised in certain cases. Because this requires a lot of effort from data holders, the provisions are aimed at a gradual increase in efforts. This means that, over time, the obligations will apply to more and more data types and an ever-increasing geographical scope. The geographical scope of the ITS-Directive covers the entire transport network of the Union, but obligations relating to the digitisation of crucial data types currently focus only on the TEN-T, primary road network and (in) important cities. This is despite the fact that, for example, the RTTI Regulation covers all roads where motorised traffic is permitted. The ITS-Directive uses the following subdivision in the geographical scope of the provisions:

- The trans-European road network (including Urban Nodes)
- Other motorways
- The Primary Road Network
- Roads in city centres of Urban Nodes and Primary roads managed by these cities
- The entire transport network of the Union

2.2.1 The trans-European road network

The Trans-European Network (TEN) comprises the main transport axes and major (urban) hubs. The management, maintenance and renewal of this key infrastructure is supported (financially) by the European Union (EU) in order to strengthen the internal market and promote economic and social cohesion.³

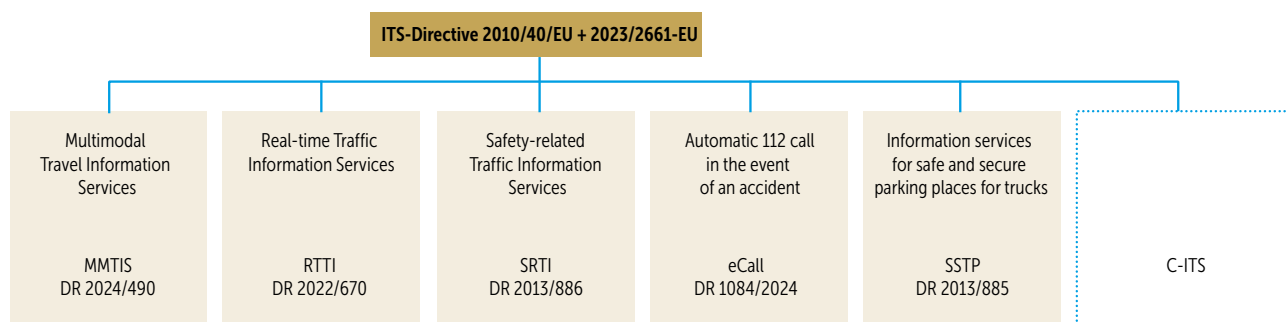


Figure 5. C-ITS regulations are currently still lacking, but are included in the new work programme.

³ The basis for this is laid down in Articles 170-172 of the Treaty on the Functioning of the European Union (TFEU) <https://wetten.overheid.nl/BWBO0001506/2013-07-01#Verdrag> and is elaborated in Regulation 1315/2013. It has recently been replaced by Regulation (EU) 2024/1679 on Union guidelines for the development of the trans-European transport network, amending Regulations (EU) 2021/1153 and (EU) No 913/2010 and repealing Regulation (EU) No 1315/2013. This has resulted in a substantial increase in the number of Urban Nodes (urban hubs).

The Trans-European Network (TEN-T) for transport and transportation consists of interconnected and interlinked national networks, such as motorways and railway lines. The TEN-T transport network consists of:

- **Railways:** Extensive connections between major cities and regions in the EU, including high-speed lines.
- **Roads: Major motorways and main roads connecting countries and regions.**
- **Inland waterways:** Canals and rivers used for freight transport.
- **Maritime ports:** Major ports that enable freight transport by ship.
- **Airports:** Main airports that enable international and national connections.
- **Multimodal hubs:** Facilities where different modes of transport converge, such as freight transshipment points and public transport hubs.

The TEN-T network consists of three levels:

- **The core network:** the main transport axes and major (urban) hubs as described above.
- **The comprehensive network:** this also includes all planned roads that are to be completed by 2050.
- **The comprehensive core network:** this also includes all planned roads that must be completed by 2040 (not shown on the map in Figure 6, but available at <https://webgate.ec.europa.eu/tentec-maps/web/public/screen/home>).

2.2.1.1 The core trans-European road network ('Core')

The European core transport network comprises a number of corridors, two of which run through the Netherlands, namely the North Sea – Baltic corridor and the North Sea – Rhine – Mediterranean corridor (see the thick red lines in Figure 6).

2.2.1.2 The comprehensive trans-European road network (Comprehensive)

In addition to the core transport network mentioned in 2.2.1.1, the thinner red lines indicate the additions to that network that must be completed by 2050. This is referred to as the comprehensive network.

2.2.1.3 Urban Node

The TEN-T network also includes so-called 'Urban Nodes'. These are urban areas where the transport infrastructure of the trans-European transport network, located in and around the urban area, is connected to other parts of that infrastructure and to the infrastructure for regional and local traffic. There are currently 26 Urban Nodes defined in the Netherlands.



Figure 6. Part of the European core network (thick lines) and the comprehensive network (thin lines).



Figure 7. Urban Nodes as currently defined for the Netherlands.

2.2.2 Other motorways

These are motorways that are not part of the TEN-T.

2.2.3 Primary road network

This concerns roads designated by a Member State outside urban areas, which connect large cities and/or regions and which are not classified as part of the (extended) trans-European road network or as motorways and are not private roads. In the Netherlands, the entire road network is designated as the primary road network.

2.2.4 Roads in city centres of Urban Nodes

This concerns roads in the centre of designated Urban Node cities that have not been designated as primary roads by the Member State. Member States may choose to limit coverage in cities at the centre of urban nodes to streets with an annual average daily traffic density of more than 7,000 vehicles. It is not yet clear whether the Netherlands will opt for this.

2.2.5 The entire transport network of the Union

This network is not formally defined as such in the ITS-Directive, but logically concerns all roads where traffic is permitted, not being a private road. An important difference with the RTTI-Regulation is that it only concerns roads where motorised traffic is permitted, while the ITS-Directive includes all modes of transport in its scope.

2.3 Data and services

The ITS-Directive obliges member states to make certain types of data and information services available. But what types of data and services are we talking about, and which road and transport authorities need to get to work on this and by when? The following description is based on the provisions of the ITS-Directive and does not yet take into account any further provisions that Member States may include in national regulations.

The sections below contain tables listing the types of data to be made available (for which geographical scope and by when) and a table listing the services to be made available. The tables are best read from the perspective of the management of certain types of roads: am I an Urban Node, do I manage Primary Roads, etc.

PLEASE NOTE

with regard to the tables listing data: The last two columns contain a date per data type and refer to when a data type will be made available digitally. should be available in machine-readable form. This date depends on when the underlying information is or becomes available. The following applies:

- If the underlying information is not available, there is no obligation to create and digitise this data.
- If the underlying data does exist in some form, such as a text file or text message, there is an obligation to convert this data into a standardised machine-readable format (make it available). The date on which this obligation to convert data into a digital format takes effect depends on

whether the underlying information already existed before a certain date or only came into being after that date.

- If the underlying information already existed before the date mentioned in the 'Updates' column, then the obligation to convert this data applies from the date mentioned in the 'All data' column.
- If the underlying information did not exist before the date mentioned in the 'Updates' column, then the obligation to convert this data applies as soon as it is created.

For example:

An existing traffic decision in the Netherlands regarding the establishment of one-way traffic, taken in 2018, was published in the Staatscourant (Dutch official gazette for governmental publications) at the time. The underlying information is therefore available until 31 December 2025. This information must therefore be made available digitally by 31 December 2027 at the latest. An amended or new traffic decision taken on 1 June 2026, on the other hand, must be made available digitally immediately because the underlying information was created after 31 December 2025.

Please note: For some data types, this date varies depending on the geographical scope.

Please note: For some data types, no date is specified in the 'All data' column. This means that the provisions currently only apply to data for which the underlying information was created after the date specified in the 'Updates' column, or that such a date does not apply to the data type.



2.3.1 Data relating to the provision of EU-wide road traffic information and navigation services

This data category mainly concerns traffic regulation provisions (such as speed limits), traffic circulation plans and temporary or permanent access restrictions. The geographical scope focuses on the primary road network, both in and between cities.

Data category	Data type	Geographical scope							Date applies to updates	Date applies to all dates
		The trans-European core road network	The extended trans-European road network	Other motorways and primary roads >8,500*	Primary road network	Urban Node	Primary roads and roads in city centres Urban Nodes >7,000*	The entire transport network of the Union		
1.1 Static and dynamic traffic rules	Access conditions for tunnels	X							31-12-2025	31-12-2027
			X	X		X	X		31-12-2026	31-12-2028
	Access conditions for bridges	X							31-12-2025	31-12-2027
			X	X		X	X		31-12-2026	31-12-2028
	Speed limits	X							31-12-2025	31-12-2027
			X	X		X	X		31-12-2026	31-12-2028
	Overtaking bans on heavy good vehicles	X							31-12-2025	31-12-2027
			X	X		X	X		31-12-2026	31-12-2028
	Weight/length/width/height restrictions	X							31-12-2025	31-12-2027
			X	X		X	X		31-12-2026	31-12-2028
	One-way streets					X			31-12-2025	31-12-2027
	Freight delivery regulations					X			31-12-2026	
	Direction of travel on reversable lanes	X	X	X		X	X		31-12-2026	
	Traffic circulation plans	X	X	X		X	X		31-12-2028	
	Permanent access restrictions	X	X	X		X	X		31-12-2026	To be determined
	Boundaries of restrictions, prohibitions or obligations with zonal validity, current access status and conditions for circulation in regulated traffic zones	X	X	X		X	X		31-12-2026	
1.2 Types of data on the state of the network	Road closures	X							31-12-2025	N/A
			X						31-12-2026	
	Lane closures	X							31-12-2025	
			X						31-12-2026	
	Roadworks	X							31-12-2025	
			X						31-12-2026	
	Temporary traffic management measures	X	X						31-12-2028	

For detailed information, see page 44.

* Concerns vehicles per 24 hours. These may be specified in more detail by Member State.

2.3.2 Data relating to information and reservation services for safe and secure parking places for trucks and commercial vehicles

Data category	Data type	Geographical scope							Date applies to updates	Date applies to all dates
		The trans-European core road network	The extended trans-European road network	Other motorways and primary roads >8,500*	Primary road network	Urban Node	Primary roads and roads in city centres Urban Nodes >7,000*	The entire transport network of the Union		
2.1 Static data	Static data relating to the parking areas	X							31-12-2025	31-12-2026
			X						31-12-2026	31-12-2027
	Information on safety and equipment of the parking area	X							31-12-2025	31-12-2026
			X						31-12-2026	31-12-2027
2.2 Dynamic data	Dynamic data on availability of parking places including whether a parking is: full, closed or number of free places available.	X	X						31-12-2027	N/A

For detailed information, see page 44.

* Refers to vehicles per 24 hours. These can be determined in more detail by each Member State.

2.3.3 Data on detected road safety-related events or conditions relating to road-safety-related minimum universal traffic information

Data category	Data type	Geographical scope							Date applies to updates	Date applies to all dates
		The trans-European core road network	The extended trans-European road network	Other motorways and primary roads >8,500*	Primary road network	Urban Node	Primary roads and roads in city centres Urban Nodes >7,000*	The entire transport network of the Union		
3.1 Dynamic data	Temporary slippery road	X	X	X					31-12-2025	N/A
	Animal, people, obstacles, debris on the road	X	X	X					31-12-2025	
	Unprotected accident area	X	X	X					31-12-2025	
	Short-term road works	X	X	X					31-12-2025	
	Wrong-way driver	X	X	X					31-12-2025	
	Unmanaged blockage of a road	X	X	X					31-12-2025	
	Reduced visibility	X	X	X					31-12-2026	
	Exceptional weather conditions	X	X	X					31-12-2026	

For detailed information, see page 44.

* Refers to vehicles per 24 hours. These may be specified in more detail by member states.

2.3.4 Static multimodal traffic data for EU-wide multimodal travel information services

Data category	Geographical scope							Date applies to updates	Date applies to all dates
	The trans-European core road network	The extended trans-European road network	Other motorways and primary roads >8,500*	Primary road network	Urban Node	Primary roads and roads in city centres Urban Nodes >7,000*	The entire transport network of the Union		
4.1 Location of identified access nodes for all scheduled modes, including information on accessibility of access nodes and paths within an interchange (such as existence of lifts, escalators)					X			31-12-2026	To be determined
							X	31-12-2028	

For detailed information, see page 44.

* Refers to vehicles per 24 hours. These can be specified in more detail by member states.

2.3.5 List of ITS services

Member States shall ensure that the ITS services specified in Annex IV are introduced as soon as possible and in any case by the date specified, with the geographical scope indicated.

Service	Geographical scope							Date
	The trans-European core road network	The extended trans-European road network	Other motorways and primary roads >8,500*	Primary road network	Urban Node	Primary roads and roads in city centres Urban Nodes >7,000*	The entire transport network of the Union	
List of ITS services								
Road safety-related minimum universal traffic information (SRTI) service as referred to in Annex I, priority area III, point 3.3	X	X						31-12-2026

For detailed information, see page 44.

* Refers to vehicles per 24 hours. These can be specified further by member states.

Part 2:

Background and further information

3 Reason for revising the ITS-Directive

The implementation of ITS within the European Union has so far been too limited and sporadic. This has restricted innovation and quality improvements for travellers. The cause of this is related to a lack of interoperability, limited cooperation between stakeholders, and unresolved issues surrounding the availability of data. The existing specifications do not focus on the full availability of crucial data across the entire network. New themes such as automated mobility (CCAM) and mobility platforms require more attention and coordination to ensure harmonisation and a well-designed playing field. Without further EU action, ITS services will develop slowly, limiting sustainable and inclusive mobility. COVID-19 has changed transport dynamics, but further digitalisation remains crucial to tackling congestion, air pollution and CO₂ emissions, as well as increasing road safety.

Without further upscaling, ITS services will continue to develop at a slow pace, limiting access to sustainable, inclusive and multimodal mobility for passengers and freight. This will make it difficult to achieve the broader EU policy objectives. An example of this is the target of reducing greenhouse gas emissions by at least 55% by 2030.

4 Purpose and basis of the revision

4.1 What is the intended purpose of the revision and what is the basis for it?

The revision of the ITS-Directive aims to accelerate the implementation of ITS within the European Union with the overall objective of improving the road transport system and reducing its negative external effects. Specific objectives include increasing interoperability and cross-border continuity, establishing effective coordination between stakeholders, and resolving issues surrounding the availability and sharing of supporting data. This contributes to the three key priorities for the transport system as outlined in the strategy for sustainable and smart mobility:

- Greening and digitising the transport sector within the EU;
- Reducing accidents, achieving 'Vision Zero' – reducing the number of road deaths to almost zero by 2050;
- Strengthening the internal market in areas such as cooperative, connected and automated mobility (CCAM).

The more specific objectives include:

- Increasing the interoperability and cross-border continuity of ITS applications, systems and services;
- Establishing effective coordination and monitoring mechanisms between all ITS stakeholders;
- Resolving issues related to the availability and sharing of data that support ITS services by requiring data to be digitised when the underlying information already exists;
- Improving road safety and transport efficiency;
- Promoting a multimodal transport system.
- Updating the scope of the ITS-Directive and the priority areas;
- Update the implementation principles (more transparency in mobility services and reference to Galileo, etc.);
- Adding some definitions in the field of C-ITS.

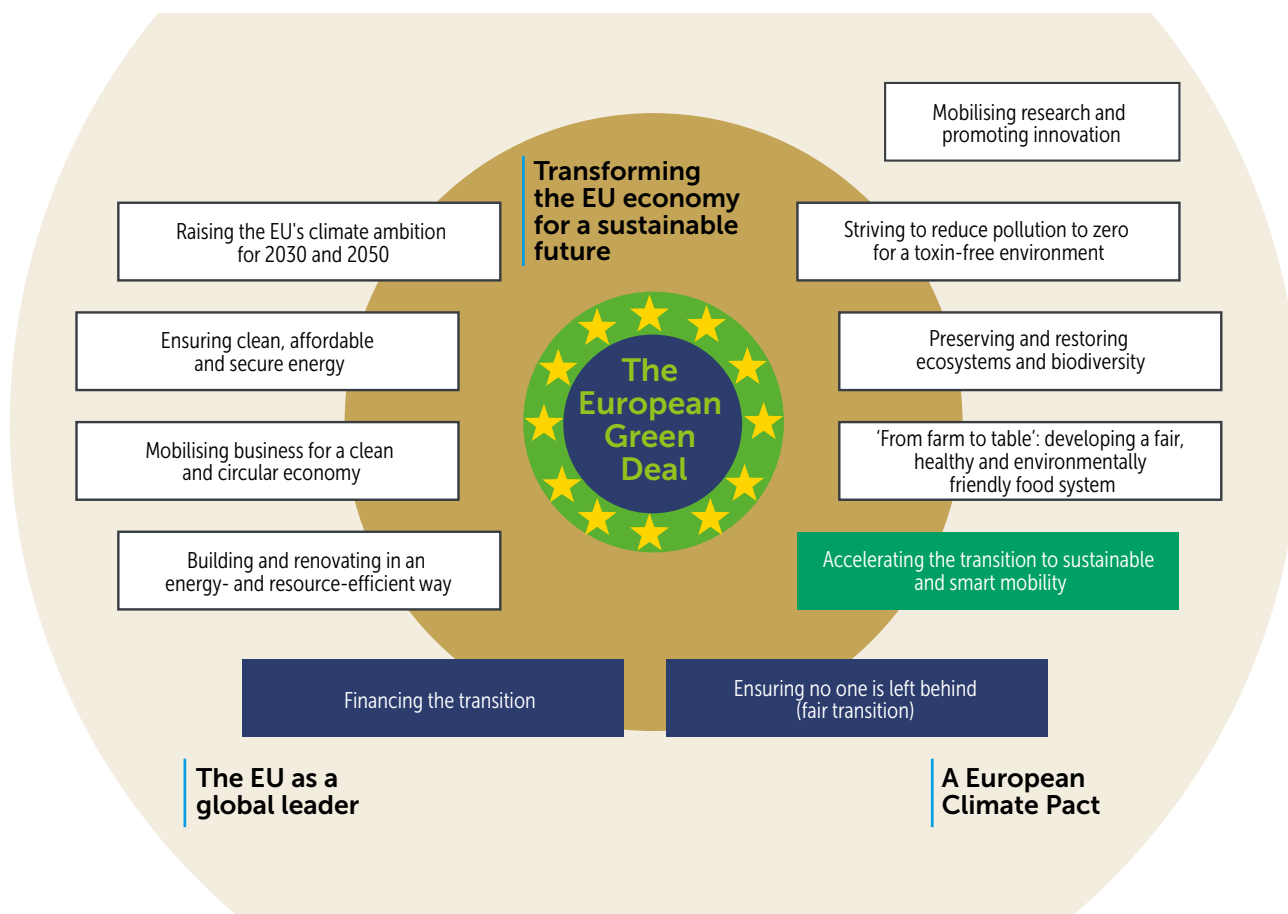


Figure 8. Location within the European Green Deal (2019/640-EU)

4.1.1 Sustainable and Smart Mobility Strategy (SSMS)

The ITS-Directive supports the implementation of the 'Strategy for Sustainable and Smart Mobility — Putting European Transport on the Right Track for the Future' (2020/789-EU, Sustainable and Smart Mobility Strategy (SSMS)).

The most important examples of this are briefly outlined below, giving an idea of the extent to which the ITS-Directive implements the strategic policy, as well as some relationships with related regulations.

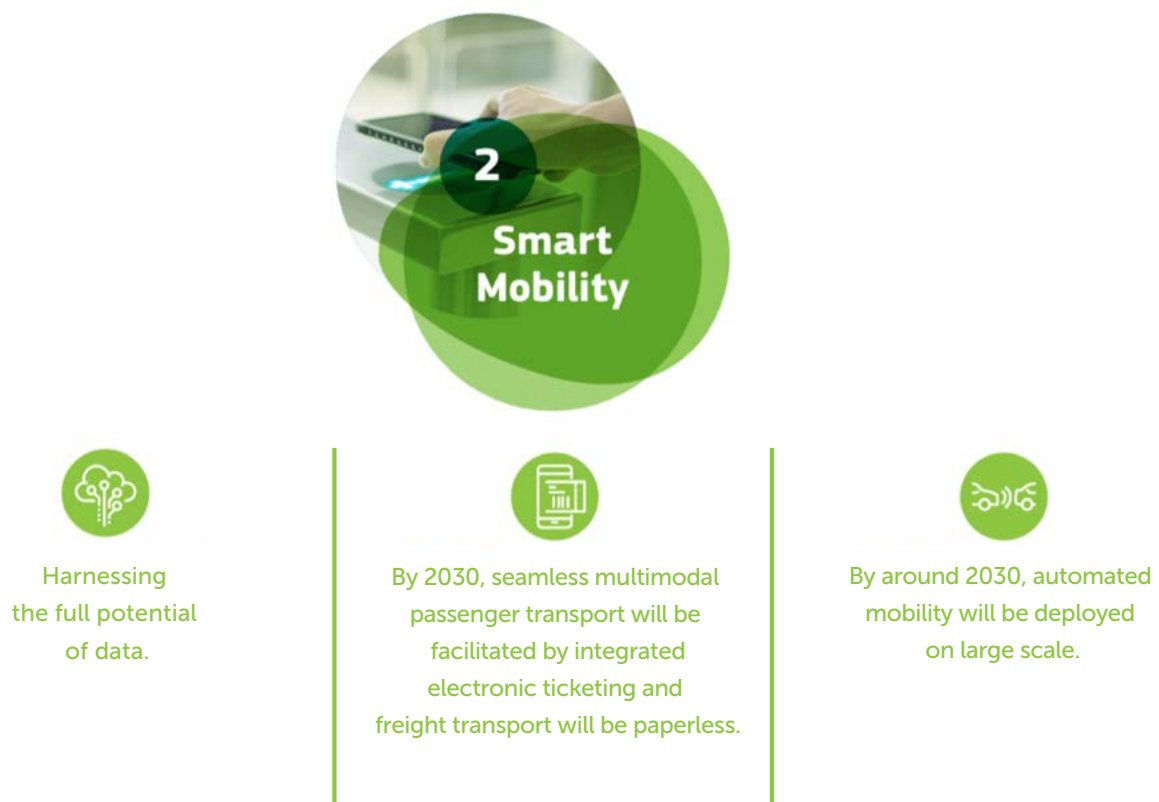


Figure 9. Objective 2 of the European strategy for sustainable and smart mobility is often directly related to the scope of the ITS-Directive.

Flagship area 6 of the strategy, entitled 'Making connected and automated multimodal mobility a reality', essentially covers issues such as:

- The EU aims to fully exploit the benefits of smart digital solutions and intelligent transport systems (ITS):
 - The integration of modes of transport into a single multimodal system, with a focus on integrated, multimodal information, ticket sales and payment services.
 - There must be better availability and accessibility of data.
 - In addition, efforts must be made to further develop smart and interoperable payment services and to encourage their use.
 - For land transport, seamless travel and digital information exchange are important objectives, including paperless travel, particularly for freight transport.

- Improving and simplifying cross-border services, contactless payment of parking and toll charges, and better information about local traffic restrictions.

It is evident that there is also a clear link here with the EU Data Act. Actions 36 and 38 from the SSMS are important policy intentions for the provisions in the RTTI and MMTIS regulations (see Figure 4).

Flagship area 7 concerns innovation, data and artificial intelligence for smart mobility. AI is regulated in principle in the AI Act, but not yet at sectoral level.

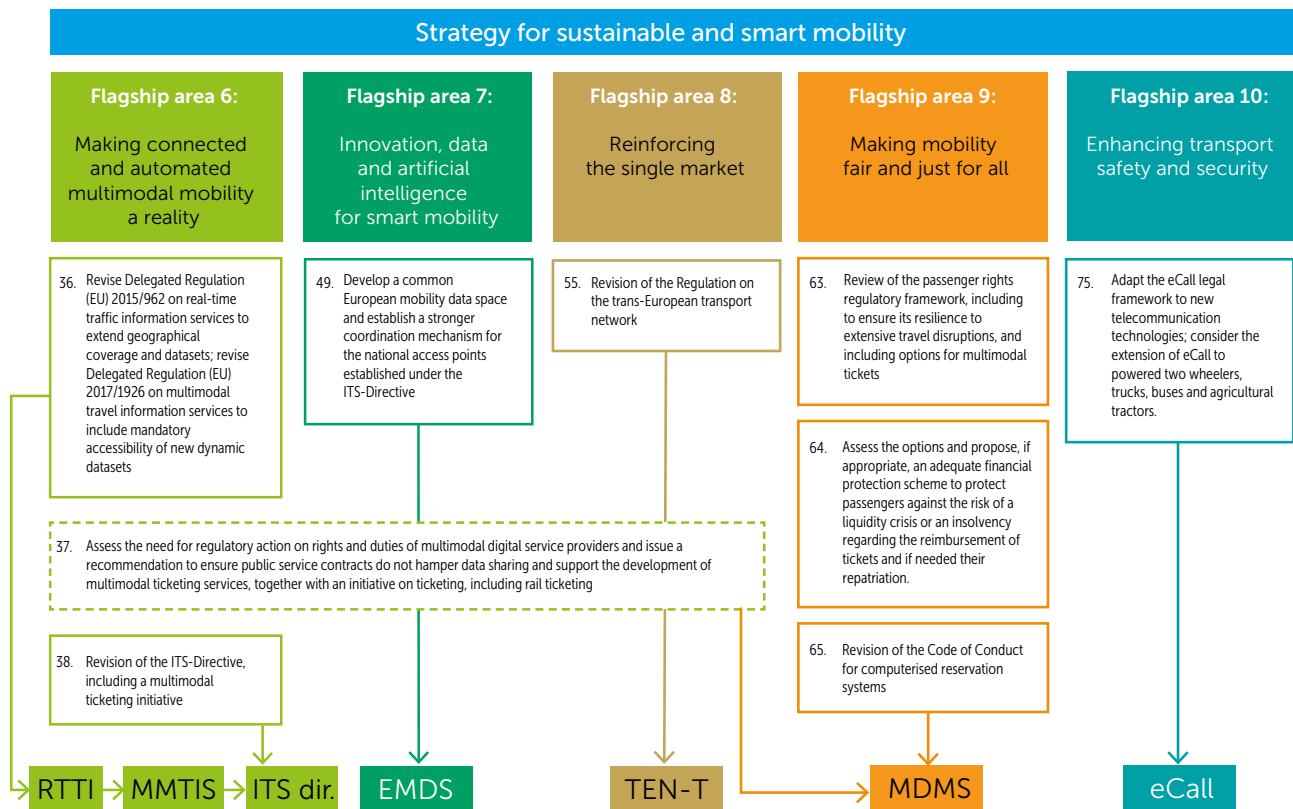


Figure 10. The core domains, actions from the **Annex** to the Smart Mobility Strategy and the relationship with regulations.

The main policy intentions related to the ITS-Directive are as follows:

- Further efforts are needed for the digital transformation of the transport and mobility sector, particularly with regard to the availability, access and Data exchange.
- The Commission will make proposals to create a common European mobility data space, taking into account horizontal governance principles as set out in the Data Strategy and the Data Act, and the principle of technology neutrality.
- The aim is to collect, link and make data available in order to achieve EU objectives such as sustainability, safety and multimodality.

We see a connection here with EMDS, which stands for European Mobility Data Space, a common framework and platform currently under development for sharing mobility data across Europe.

Flagship area 8 covers reinforcing the single market and focuses on strengthening the TEN-T network, which is supported by ITS regulations.

Flagship area 9 is about fair and just mobility for all. The strategy focuses, among other things, on the shift to sustainable, smart and resilient mobility. This will only happen if it is done in a fair way. The Commission will therefore ensure that the possibilities offered by the Just Transition Mechanism are fully exploited to ensure that the new mobility is affordable and accessible in all regions and

for all passengers, including persons with disabilities and/or reduced mobility.

In particular, there is a link here with multimodal digital mobility services (MDMS) that focus on improving the planning, booking and purchasing of tickets for journeys combining different modes of transport for travellers in the EU. Many people use digital services such as route planners and ticket sellers to compare different options. This initiative addresses challenges for these services and implements Action 37 of the mobility strategy as well as Actions 63, 64 and 65 (see Figure 10).

Finally, **Flagship area 10** contains the policy intention as the basis for the eCall regulation and its tightening, which was recently (2024) completed.

4.1.2 The AI Act

The Digital Strategy (Digital Decade Policy) also relates to emerging artificial intelligence. This is regulated in the AI Act, but not yet on a sectoral basis. The specifications must be ready by 2025, which should also provide some clarity about critical infrastructure classified as 'high risk' (including traffic management, i.e. traffic management and more specifically traffic management centres, iVRIs, etc.) in the annex 3. These are risks that could endanger people or property. CROW-KpVV is active within the European TM 2.0 platform and recently published its first position paper on this subject.

4.2 What is its added value for society?

The intended added value of the revision of the ITS-Directive lies in promoting cooperative, connected and automated mobility (CCAM) and creating a good user experience for travellers on the European transport network across all modes of transport, improving road safety through better safety-related information, more sustainable mobility choices through better multimodal travel information, and reducing congestion and emissions through the use of better information services. This is ensured by guaranteeing the continuity of interoperable ITS services across borders. These aspects are essential to meet both the objectives of the European Green Deal, with regard to reducing greenhouse gas emissions from the transport sector, and the development of a common European transport market. These goals can only be achieved through a common European legal framework. The revision of the Directive will contribute to the coherent development and roll-out of supporting infrastructure, ensuring data interoperability and the provision of harmonised services to end users.

4.3 Costs and investment of implementation

Depending on the choices made during implementation within the Member States, the expected costs will largely have to be borne by public authorities for investments in road infrastructure, digital connections, national access points and central ITS subsystems. In this sense, road authorities will be given additional tasks, starting with significant efforts towards the digitisation of public space data.. The development of the Directive's ambitions and their practical application also requires additional and sometimes new skills that are not always available within organisations. An example of this is dealing with privacy aspects and ensuring data security. It is clear that the costs will exceed the benefits, but those benefits could ultimately be significant if we work together to improve the quality of data and digitisation to such an extent that services really do add value for users and support the policy of road authorities.

4.3.1 Short- and medium-term returns

In the shorter term, digitisation and data help with the modal shift towards more sustainable modes of transport and savings in fuel consumption by vehicles that are not yet emission-neutral. Users will only opt for chain mobility if there is good, high-quality, relevant and comprehensive information available to help them make choices. ITS services can also help to shape objectives in the areas of sustainability and inclusivity. Investing in the collection and disclosure of accurate and up-to-date data ultimately yields social benefits in the form of sustainable, safe and integrated transport chains.

4.3.2 Medium and long-term returns

In the longer term, we see nothing but benefits for society as a whole. In addition to the social value, there is also an economic advantage to be gained in the savings on expenditure on physical roadside systems, as information can be provided in-car instead of via the roadside. The capital-intensive construction and maintenance of physical roadside systems can therefore be reduced or even eliminated altogether.

An essential condition for this is, of course, that the digital infrastructure and the associated data exchange function securely and reliably.

We are already seeing efforts to get the data on speeds in order, for example.

We are doing this now in order to gain user acceptance by users of the mandatory Intelligent Speed Assistant (ISA⁴), which will later, with more autonomous transport, enable the creation of dynamic speed windows. After all, in sharp contrast to human drivers, autonomous vehicles have 100% compliance behaviour, but first the entire system (the entire basis) must be in order. We see something similar in the traffic circulation plan from the European Commission's RTTI Regulation⁵. At present, we can control route selection through navigation systems, but in a more autonomous future, we will be able to simply steer traffic flows within reasonable limits or, through smart pricing, match supply and demand much more effectively⁶.

Maintaining a leading role in development and innovation as the Netherlands is important for the market position and to support the knowledge and innovation economy. In short, the social value of data, digitisation and ITS services is significant, but we must first do it for what it will yield. The European Commission estimates that **every euro invested in data ultimately yields 8 euros in social value** (Eucad conference 2023).

⁴ For more information, see: [CROW publication on intelligent speed assistance \(ISA\) for road authorities](#)

⁵ For more information, see: [CROW-RTTI regulation for road authorities](#)

⁶ For more information, see: [CROW white paper on future-proof road design](#)

4.4 Other impacts

The ITS-Directive is expected to have an impact on innovation, which will be reflected in common implementation specifications and improved data availability and quality. Positive effects on health are mainly expected as a result of reductions in air pollution. Employment will be affected by the need to roll out digital infrastructure and collect data, while the accelerated implementation of ITS will contribute to the internal market and the competitiveness of businesses. Finally, people with reduced mobility (in rural areas, older people or people with disabilities) will benefit from greater availability and accessibility of multimodal transport information services.

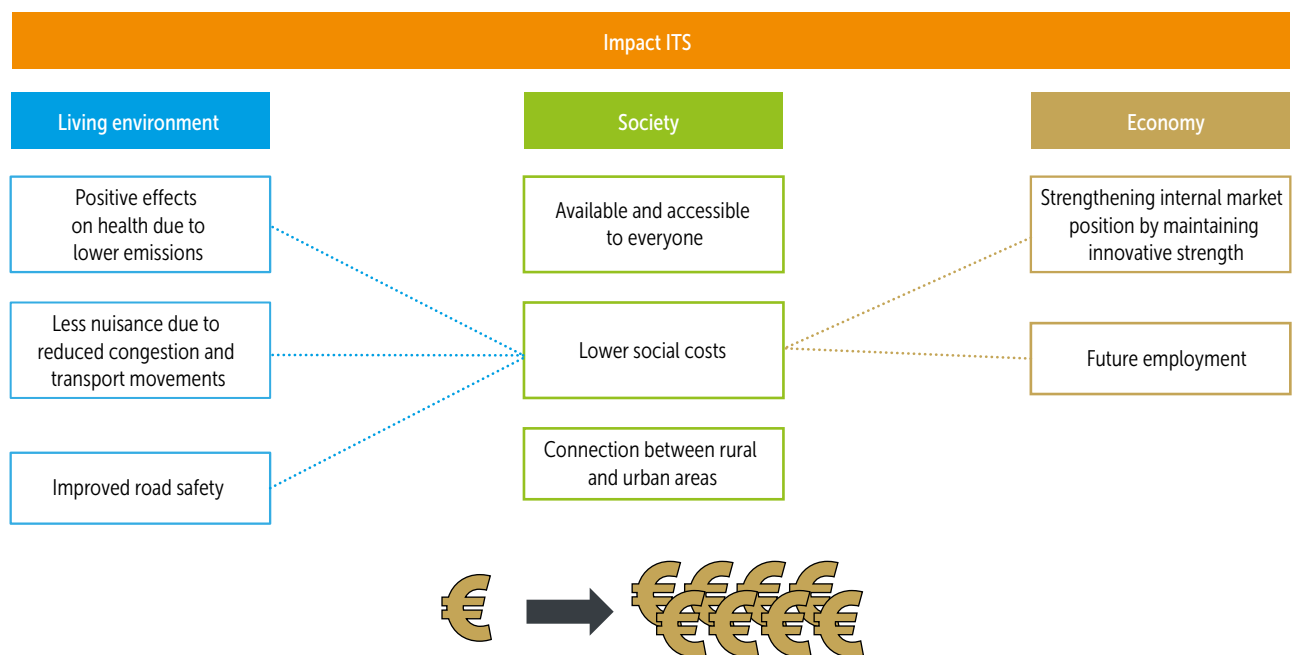


Figure 11. The impact of ITS on the living environment, social aspects and the economy, and the relationship between them. The Commission indicates that every euro invested in data ultimately yields €8 in social value.

Dutch policy on mobility data and relevant EU regulations:

Date	Description	Source
22-5-2023	Letter to Parliament on the Digital Mobility Data System	link
27-10-2023	Collective letter on EU legislation in the field of mobility data and road traffic	link
27-10-2023	National progress report ITS 2020-2023	link
27-10-2023	Impact analysis of the RTTI Regulation	link
21-11-2023	Letter to Parliament on the use of vehicle data	link
13-02-2024	Smart integration and responsible introduction of automated transport	link
11-03-2024	Letter to Parliament on updated Smart Mobility Monitor 2024	link

5 The revision

5.1 Who does the ITS-Directive target?

5.1.1 Obligations and powers of the European Commission

The ITS-Directive contains a number of rules and provisions relating to the conditions under which regulations may be drawn up or amended. Given the focus of this document – the role of road authorities – we will not consider the rules for the European Commission.

The ITS-Directive gives the European Commission the following obligations and/or powers:

- Drawing up five-year work programmes, with powers limited to the revised priority areas
- Establishing further and/or amended specifications for Annex III
- Establishing an ITS-Advisory Group for stakeholder consultation
- Assessing and reporting on the state of affairs
- regarding the implementation of the ITS-Directive to Parliament and the Council
- Establishing and monitoring KPIs relating to the implementation of the Directive
- Simplifying the rules for reporting by Member States on the state of play regarding the implementation of the Directive (ultimately one report from each Member State every three years on the ITS-Directive and all regulations).

5.1.2 Obligations and powers for Member States

The role of Member States with regard to the application of specifications to the implementation of the ITS-Directive focuses in particular on the following aspects of the revision:

1 Implementation of Specifications:

- Member States are obliged to take the necessary measures to ensure that the specifications adopted by the European Commission in accordance with Article 6 are applied to ITS applications and
- services when they are deployed. This must be done in accordance with the principles set out in Annex II;
- However, Member States retain the right to decide on the implementation of such applications and services on their territory.

It is important to note that Member States must supervise the process, but the actual work must come from road authorities and transport authorities.

2 Cooperation on Priority Areas:

- In cases where specifications have not yet been adopted with regard to priority areas, Member States are expected to cooperate, including with relevant stakeholders, with regard to these priority areas.

3 Coordination and Cooperation:

- Member States are encouraged to cooperate, for example through European Union-supported coordination projects, on operational aspects of the implementation of specifications adopted by the European Commission. This cooperation covers aspects such as standards, harmonised profiles, common definitions, metadata, quality requirements, interoperability of National Access Points, data exchange conditions, secure access and common training and awareness-raising activities.
- Cooperation is also required for aspects relating to requirements for data providers, data users and ITS service providers as laid down in the specifications. This cooperation includes assessing compliance with requirements, developing mechanisms for enforcement of compliance and issues relating to cross-border cooperation.

The revised text emphasises the need for cooperation between European Union Member States and with stakeholders in the implementation and operational aspects of ITS applications and services. However, Member States remain autonomous in deciding on the deployment of such applications and services on their territory. The recitals clearly state that costs for public parties must be kept as low as possible (Art. 7.5). Cost-increasing aspects include, for example, the handling of personal data processing (interference), the necessary manpower and measures to ensure that the relevant data is made available with a sufficient level of quality, which must be minimised.

5.1.3 Obligations and powers for road authorities

The most important obligation for road authorities under the ITS-Directive relates to making crucial data available in a standardised machine-readable format for a specific geographical scope and for a specific date. This obligation is linked to the presence or absence of so-called ‘underlying information’.

Article 4 of the ITS-Directive defines the term ‘underlying information’ as follows:

“underlying information” means information within the scope of this Directive that has been determined to be relevant for informing road and ITS users, in particular by road authorities where they are responsible for such information;

The explanation of the term ‘underlying information’ states that road authorities and transport authorities are responsible for providing road users and travellers with accurate information based on the underlying information. This makes it clear that the primary responsibility for the accuracy, completeness, timeliness and usability of this underlying information lies primarily with public authorities, but may be supplemented by other sources.

5.1.3.1 Role and tasks: information and mobility ITS services

Public authorities must take the following steps in conjunction with service providers as a result of the Directive:

1 Facilitating electronic data exchange:

- Take active steps to facilitate electronic data exchange between relevant public authorities, stakeholders and relevant ITS service providers across borders;
- In particular, using standardised interfaces such as DATEX II and INSPIRE to streamline data exchange.

2 Timely updating of multimodal traffic and travel data:

- Ensure timely updating of available multimodal traffic and travel data used for multimodal digital mobility services.
- Collaborate with stakeholders to ensure that this data is updated regularly.

3 Facilitate electronic data exchange with feedback loop for quality improvement:

- Facilitate electronic data exchange between relevant public authorities, stakeholders and relevant ITS service providers across borders;
- Including mechanisms for feedback on data quality to ensure accuracy and reliability.

4 Timely updating of available road and traffic data:

- Regular and timely updating of available road and traffic data used for real-time traffic information (RTTI) by relevant public authorities and stakeholders.

5 Establishing requirements for data collection:

- Making agreements regarding the necessary requirements for the collection of road and traffic data by relevant public authorities (such as traffic circulation plans, traffic rules and recommended routes, particularly for heavy vehicles);
- Ensuring the availability and accessibility of existing road and traffic data to ITS service providers, collected by relevant public authorities and/or the private sector;
- Make agreements (at international level) on the minimum quality of data.

6 Facilitate electronic data exchange between relevant public authorities and ITS service providers:

- Facilitate electronic data exchange between relevant public authorities and ITS service providers, as well as other relevant stakeholders;
- Promoting standardised interfaces to facilitate the smooth exchange of data.

7 Timely updating of road and traffic data:

- Ensuring the timely updating of road and traffic data, including traffic circulation plans, traffic rules and recommended routes, by relevant public authorities and/or, where applicable, the private sector;
- Actively collaborating with the private sector to ensure that data is updated regularly.

8 Facilitate electronic data exchange with digital map producers and service providers:

- Facilitate electronic data exchange between relevant public authorities and stakeholders on the one hand, and private digital map producers and service providers on the other;
- Promoting cooperation and standardised exchange for updating road and traffic data for digital maps.

These additional actions focus on collecting, exchanging and keeping crucial road and traffic data up to date, emphasising cooperation between public authorities and market parties. This contributes to the accuracy and relevance of data for ITS service providers and stakeholders such as users.

These actions aim to facilitate data exchange, ensure the timeliness of multimodal data, promote standardised interfaces and obtain feedback on data quality, enabling effective collaboration and reliable data exchange across borders.

Public authorities play a crucial role in coordinating efforts, setting standards and promoting cooperation between different stakeholders to improve the effectiveness of EU-wide multimodal digital mobility services.

5.1.4 Public transport authorities and transport providers

Transport authorities should take the following steps in line with the requirements mentioned:

1 Ensure data availability and accessibility:

- Ensure that accurate road and multimodal travel and traffic data is available in a standardised format;
- Ensure that this data is accessible to the relevant public authorities.

2 Facilitate electronic data exchange:

- Make active efforts to facilitate electronic data exchange between government agencies, stakeholders and ITS service providers;
- Ensuring that cross-border exchange runs smoothly.

3 Timely updating of data:

- Regularly and promptly update available road and multi-modal travel and traffic data;
- Ensure an effective mechanism for keeping the data required for mobility management up to date.

The aim is to lay a solid foundation for accurate mobility services in the multimodal chain by ensuring that the necessary data is available, easily exchangeable and regularly updated.

In doing so, transport authorities must comply with privacy and data protection requirements.

5.1.5 Reporting

Member States must report to the Commission within 15 months of the entry into force of this Directive on the implementation, regulations and national activities relating to priority areas and data and services in Annexes III and IV. Member States must report every three years, and the Commission will ensure that the reporting deadlines are in line with this frequency.

No later than 12 months after each deadline for Member State reports, the Commission shall submit a report to the European Parliament and the Council. The report shall assess implementation, analyse the functioning of Articles 5-11 and 16, including financial resources, and consider amendments to the Directive if necessary.

Reporting must be in a standardised format, with a number of KPIs being leading and reported separately for each type of road network/transport network and nodes (where applicable). In addition, the percentage of the network for which data is available must be reported.

European Commission	Memberstate States	Road authorities	Transport authorities
ITS Work Programme (2024-2028)	Implementation of the Directive	Objective: availability and accessibility of data for traffic information and multimodal travel information services	Objective: availability and accessibility of data for traffic information and multimodal travel information services
Drafting and updating existing delegated acts	National interpretation		
Mandates for standardisation	Determining primary network	Availability of data	Data availability
Coordination with stakeholders (ITS Advisory Group)	Roll-out of services	Data quality	Data quality
Monitoring implementations	Consultation with	Data exchange	Data exchange
Reporting to Parliament	EU standardisation	Keeping data up to date	Keeping data up to date
	Reporting	Data security	Data security
		Data accessibility	Data accessibility

Figure 12. An indication of primary roles and tasks within the ITS-Directive. It is evident that, in practice, broad cooperation is needed to realise these tasks. It therefore shows who is responsible for what, but all parties naturally need each other in the process.

Below is an indication of the expected KPIs:

Implementation KPIs

Mandatory for reporting in 2025 for core network, comprehensive core network and motorways

Mandatory for reporting from 2028 onwards also for urban nodes and primary road network

KPI	Description	Formula/data
3.1.1 Infrastructures/ equipment for information collection <i>road KPI</i>	Data to be provided by type of network and service, and where relevant, distinguishing between fixed and mobile equipment.	Length of road network type/road sections (in kilometres) equipped with information collection infrastructures and the total length of this same road network type (in kilometres): KPI = (km of road network type equipped with information collection infrastructure ÷ total km of the same road network type) × 100
3.1.2 Incident detection <i>road KPI</i>	Data to be provided by type of network and service, and where relevant, distinguishing between fixed and mobile equipment.	Length of road network type ÷ road sections (in kilometres) equipped with information collection infrastructure and the total length of the same road network type (in kilometres): KPI = (km of road network equipped with information collection infrastructure ÷ total km of the same type of road network) × 100
3.1.3 Traffic management and measures <i>road KPI</i>	Data to be provided per type of network.	Length of road network type ÷ road sections (in kilometres) equipped with ITS for incident detection and the total length of the same road network type (in kilometres): KPI = (km of road network type equipped with ITS for incident detection ÷ total km of the same road network type) × 100
3.1.4 Cooperative ITS services and applications <i>road KPI</i>	Data to be provided per network type.	Length of road network type/road sections (in kilometres) covered by traffic management and traffic control measures and the total length of this same road network type (in kilometres): KPI = (km of road network type covered by traffic management and traffic control measures ÷ total km of the same road network type) × 100
3.1.5 Real-time traffic information <i>road KPI</i>	Data to be provided per network type.	Length of road network type ÷ road sections (in km) covered by C-ITS services or applications and the total length of this same road network type (in km): KPI = (km of road network type covered by C-ITS services or applications ÷ total kilometres of the same type of road network) × 100
3.1.6 Dynamic travel information <i>multimodal KPI</i>	Data to be provided per network type.	Length of road network type/road sections (in kilometres) with real-time traffic information services and total length of this same road network type (in km): KPI = (km of road network type with real-time traffic information services ÷ total km of the same road network type) × 100
3.1.7 Freight information <i>if possible multimodal or road KPI</i>	Data to be provided per type of network/ node.	Length of transport network type (in kilometres) with dynamic travel information services and total length of the same transport network type (in kilometres): KPI = (km of transport network type with dynamic travel information services ÷ total km of the same transport network type) × 100 Number of transport hubs (e.g. railway or bus stations) covered by dynamic travel information services and total number of the same transport hubs: KPI = (number of transport hubs with dynamic travel information services ÷ total number of the same transport hubs) × 100

Result KPIs

Mandatory for reporting from 2028 onwards

KPI	Description	Formula/data
3.2.1 Change in travel time <i>road KPI</i>	Data also includes vehicle kilometres for the route/area in question.	$KPI = ((\text{travel time before ITS implementation or improvement} - \text{travel time after ITS implementation or improvement}) \div \text{travel time before ITS implementation or improvement}) \times 100$
3.2.2 Change in the number of traffic accidents with fatalities or injuries <i>road KPI</i>	If possible, distinguish between accidents involving fatalities, serious injuries or minor injuries.	Data also includes vehicle kilometres for the route/area in question. Number of traffic accidents with fatalities or injuries before ITS implementation or improvement: Number of traffic accidents with fatalities or injuries after ITS implementation or improvement:
3.2.3 Change in traffic CO ₂ emissions <i>road KPI</i>	Specify routes/areas where ITS has been implemented or improved. The length or area in which the change in CO ₂ -emissions is calculated must be representative.	$KPI = ((\text{traffic-CO}_2\text{-emissions before ITS implementation or improvement} - \text{traffic-CO}_2\text{-emissions after implementation or improvement}) \div \text{traffic -CO}_2\text{-emissions before ITS implementation or improvement}) \times 100$

Financial KPIs

Mandatory for reporting in 2025 for core network, extended core network and motorways

Mandatory for reporting from 2028 onwards also for urban nodes and primary road network

KPI	Description	Formula/data
3.3.1 Annual public investment in ITS (as % of total investment in transport infrastructure)	ITS includes all types systems and services together.	
3.3.2 Annual public operational and maintenance costs of ITS (in euros per kilometre covered network)	ITS covers all types of systems and services joint	Where possible, the same data for private investment and costs

Data and the service behind the data

Such a report provides insight into the progress made with regard to data availability. However, data is only a means to an end and not an end in itself. It is therefore essential to also pay attention to the service that uses the data. Geographical coverage is an indicator that in itself says nothing about the completeness and usability (quality) of the data. The actual use of the service behind the data therefore remains of great importance when assessing the social added value and the effects of the efforts.

5.2 Overview of the most important changes

Essentially, the Directive requires the availability of crucial data types, with far-reaching obligations for road authorities, with Urban Nodes in particular facing significant obligations. It also includes an obligation to provide ITS services as described in Annex IV. In other words, each Member State is obliged to introduce and maintain an SRTI service. The ITS-Directive is no longer just a framework within which the CIE has the right to draw up specifications, but now the ITS-Directive also imposes obligations to make data and services available. This is being done step by step by requiring more and more types of data for an increasingly larger geographical scope. Annex IV currently contains only one mandatory service (SRTI). So there is not yet really an EU-wide roll-out of services. However, the conditions for achieving these services are being tightened further and further.

5.2.1 Focus on priority areas and sustainability

Compared to the existing version of the ITS-Directive, the revision includes an update of the scope and adjustments to the priority areas (Art. 2) for the application of specifications and standards. The most striking change is that the ITS-Directive now also sets requirements for the availability of data and the roll-out of ITS services within a specific geographical scope (Art. 1, paragraph 2a).

The priority areas are now as follows:

- A Priority area I: Information and mobility ITS services:
 - a Multimodal digital mobility services;
 - b Traffic information and navigation services.
- B Priority area II: Travel, transport and traffic management ITS services:
 - a Improved traffic and incident management services (TM2.0);
 - b Mobility management services;
 - c EU-wide ITS framework architecture;
 - d ITS applications for freight and logistics.
- C Priority area III: Road safety and security ITS services:
 - a Information services for safe and secure freight vehicle parking areas;
 - b Road safety-related information services;
 - c eCall;
 - d Specifications for the safe use of driver assistance information systems.
- D Priority area IV: ITS services for cooperative, connected and automated mobility (C-ITS):
 - a C-ITS V2X specifications;
 - b CCAM specifications;
 - c Specifications for the EU C-ITS management system (CMS).

This places a clear focus on the availability of and access to data for traffic optimisation, communication between vehicles and roadside systems, information security and service roll-out. The Directive thus appears to be steering towards a shift in focus from systems to services, thereby placing greater emphasis on the end user on the one hand, and from traffic flow to a more sustainable (Art 3.4) transport system on the other. These shifts are also reflected in

the modification of concepts such as interoperability, with the emphasis now more on the continuity of ITS services (Art. 4.2) and an expansion to include information on charging and alternative fuels (Art. 4.14).

5.2.2 Definitions and concepts

5.2.2.1 Standardisation

The previous ITS-Directive was based more on standardisation of a national nature (national standardisation procedure). We now see a clearer emphasis on European standardisation and harmonisation than before, which does justice to cross-border ITS services and better market functioning.

5.2.2.2 ITS and C-ITS

In January 2019, the draft C-ITS Regulation drawn up by the Commission was ultimately rejected by the Council. This means that, to this day, there is still a gap in the link between ITS and C-ITS, including with regard to the definition of C-ITS. We now find this in the new ITS-Directive, albeit in a slightly modified form compared to the C-ITS Act of 2019:

Art 4.19: 'cooperative intelligent transport systems' or 'C-ITS' means intelligent transport systems that enable ITS users to **interact and** cooperate by exchanging secured and trusted messages, **without any prior knowledge of each other and in a non-discriminatory manner**.

Article 4.20: 'C-ITS service' means an ITS service provided through C-ITS;

NB: the **text in bold** indicates the changes compared to the definition in the draft C-ITS Regulation.

5.2.2.3 Other terms

In addition to the addition of the term C-ITS and the amendment of the definition of a standard, the following terms have been added:

- Availability of data:
The existence of data in a digitally machine-readable format;
- National access point (or NAP):
A digital interface set up by a Member State that constitutes a single access point, as defined in the specifications referred to in Article 6;
- Data accessibility:
The ability to request and obtain data in a digital machine-readable format;
- Multimodal digital mobility service:
A service that provides information on traffic and travel data, such as the location of transport facilities, timetables, availability or fares for more than one mode of transport, possibly including elements that enable reservations, bookings or payments to be made or tickets to be issued.
- Underlying information:
Refers to information within the scope (geographical scope) of the ITS-Directive that has been determined to be relevant for informing road and ITS users, *in particular by road authorities* when they are responsible for such information. If this underlying information exists, it must be published in a standardised, machine-readable format on the NAP;

■ Primary road:

A road designated by a Member State outside urban areas, connecting major cities and/or regions, and not classified as part of the comprehensive trans-European road network or as a motorway.

Refers to a road outside urban areas, designated by a Member State, which connects major cities or regions, or both, and which is not classified as part of the comprehensive trans-European road network or as a motorway.

5.2.3 Data security and privacy safeguards

Rules relating to data protection and privacy in the context of the ITS-Directive include the following provisions (Art. 10):

■ Processing of personal data:

Personal data, as defined in Article 4(1) of Regulation (EU) 2016/679, may be processed under this Directive only to the extent necessary for the implementation of ITS applications, services and actions as identified in Annex I. The main objectives are to ensure road safety or security and to improve traffic, mobility or incident management;

■ "Specifications relating to the processing of personal data:

If specifications adopted pursuant to Article 6 concern the processing of data that qualify as personal data, they must set out the categories of such data and appropriate safeguards for data protection in accordance with Regulation (EU) 2016/679 and Directive 2002/58/EC.

The last two concepts were added to the committee's proposal at a late stage, but they are not insignificant. *The concept of 'underlying information'* says something about the role of road authorities when it comes to responsibility for data in principle. Government information (data) is taken as the starting point here. In addition, it is established that the identification of this information is important for informing road and ITS users.

Possible consequences for road authorities:

■ Responsibility:

Road authorities are responsible for managing and providing this relevant information, given their specific role in managing roads and the associated data and information.

■ Informing users:

Road authorities must ensure that this underlying information is used effectively to inform road and ITS users. This may relate to matters such as traffic information, road works, speed limits, and other relevant data that affect road safety and efficiency. The accuracy of data in relation to the outside world (digital twin) is also an important task for road authorities, possibly in collaboration with market parties.

■ Cooperation:

This article requires, where necessary, cooperation between road authorities and other relevant bodies to ensure that information is established and disseminated in a coherent manner.

In essence, such matters contribute to the effective management of traffic information and ITS-related data, with road authorities playing a crucial role in ensuring the relevance and effective communication of this information to road users.

Furthermore, there is *the concept of 'Primary Road'*. According to the definition in the ITS-Directive, 'a Primary Road' refers to a road outside urban areas designated by a Member State. The characteristics of these roads are as follows:

- Outside Urban Areas:

These are roads located outside the boundaries of urban areas;

- Connections between major cities or regions:

The primary purpose of these roads is to connect major cities or regions. They serve as important corridors for traffic between significant urban centres or areas;

- Not Classified as Trans-European Road Network or Motorway:

The definition explicitly excludes roads that are part of the extensive trans-European road network or that are classified as motorways.

The exact roads that are considered 'Primary roads' will therefore be determined by the specific designations of each Member State. It is up to the individual Member States to designate roads that meet the above criteria as Primary roads. These roads play a key role in connecting important urban centres and regions for efficient traffic and transport.



In such cases, the impact assessment referred to in Article 6(7) of this Directive must include an analysis of the impact of such processing on the protection of natural persons with regard to the processing of personal data;”

■ **Use of Anonymised Data:**

Where technically feasible and in accordance with the purposes of data processing, anonymised data should be used;

■ **Pseudonymisation of Data:**

If anonymisation is not technically feasible or the purposes of data processing cannot be achieved with anonymised data, the data must be pseudonymised⁷. Pseudonymisation must be applied when technically feasible and the purposes of data processing can be achieved with the use of pseudonymised data.

In addition, Article 10a has been added. This article refers to the specifications relating to the EU C-ITS security certificate management system. The article states that the European Commission has the power to adopt these specifications in accordance with the provisions of Article 6(8). The EU C-ITS security certificate management system comprises various roles, such as:

- the C-ITS certificate policy authority;
- the C-ITS Trusted List Manager;
- the C-ITS contact person.

The European Commission is responsible for ensuring that these roles and tasks are performed properly.

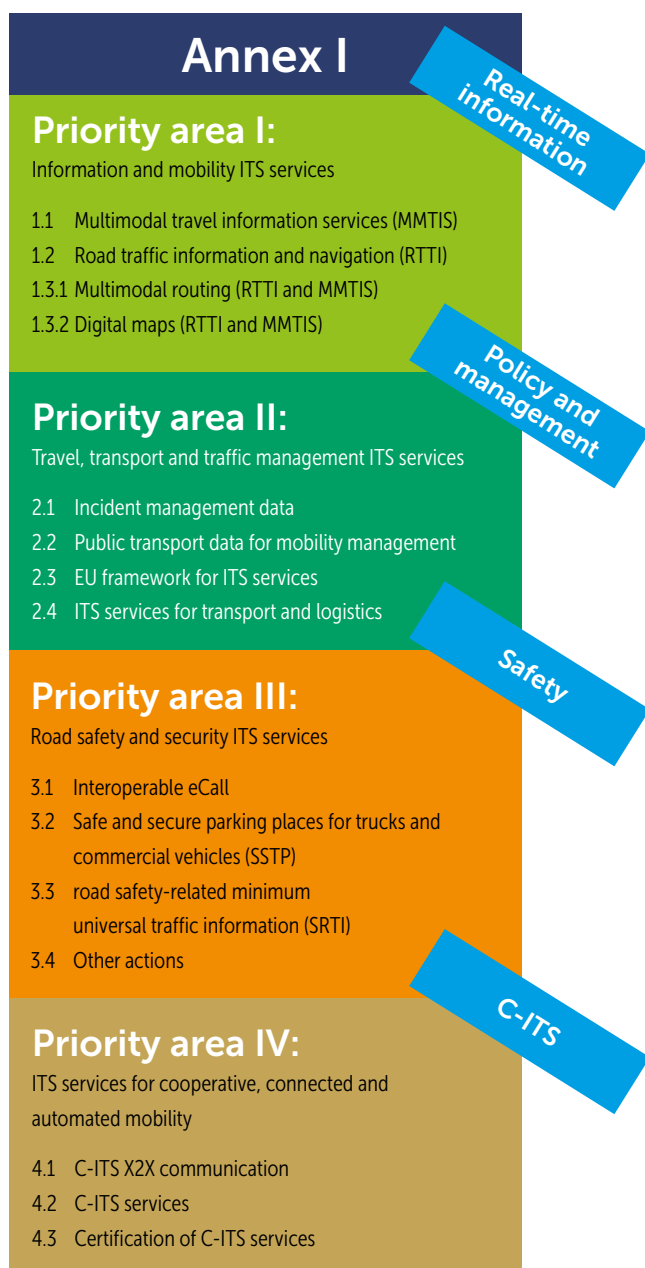
⁷ Pseudonymisation is a privacy-preserving technique whereby personally identifiable information is replaced or encrypted with pseudonyms to protect the privacy of individuals, while still allowing certain data processing activities to take place.

6 Annexes to the ITS-Directive

This chapter will provide an overview of the annexes to the ITS-Directive.

6.1 Annex I

Annex I provides detailed specifications and standards for the priority areas set out in Article 2 of the Directive. It covers various aspects of Intelligent Transport Systems (ITS) in four priority areas. In summary, the following aspects are covered in the priority areas:



6.2 Annex II

This annex describes principles for the detailed specifications (regulations) to be developed for the introduction of ITS. The Commission is expected to work within the mandate granted and to observe the principles mentioned. This annex is therefore addressed to the European Commission and European standardisation (CEN/ISO) with a reference to national standardisation (NEN). It concerns the general principles for:

- The introduction of ITS in Member States;
- Specifications relating to, among other things, technical, functional and organisational provisions;
- The adaptation and adoption of regulations by the Commission;
- The drafting of standards and mandates by the standards committee.

These principles are important to use as a yardstick for ITS services. These principles are briefly discussed below with the aim of understanding exactly what is meant.

6.2.1 Effectiveness

ITS must make a concrete contribution to solving the most important challenges affecting road transport in Europe, such as:

- Reducing congestion;
- Addressing emergencies and weather phenomena related to road traffic;
- Reducing emissions;
- Improving energy efficiency;
- Improving road safety.

The second item is an addition to the existing text from the previous version of the Directive. It indicates that congestion, emissions and road safety are and will remain important, but that incident management and dealing with (extreme) weather have also become important. This point also clearly shows that the ITS-Directive has been drawn up under the banner of the European Green Deal.

6.2.2 Cost-efficiency

The costs must be proportionate to the achievement of the (sub)objectives.

6.2.3 Proportionality

Achievable quality and roll-out must be proportionate to national, regional and local circumstances. However, this does not mean that these should take precedence over EU objectives, but rather that it is sensible to bring together European and decentralised developments and take local priorities into account, without compromising interoperability.

6.2.4 Supporting the continuity of ITS services

The focus of services to be developed is primarily on the TEN-T network (but certainly not exclusively) and, where necessary, has a clear cross-border character, including to third countries such as Norway, Switzerland and Ukraine. Regions, cities and rural areas must be taken into account.

6.2.5 Interoperability

In the previous ITS-Directive, the focus on interoperability was solely on the systems; with this revision, applications and services are now included in the scope. Applications and services must explicitly operate via standard protocols. This creates a good exchange of information, which contributes to service development and quality, and therefore also to the usability of the service for all users across borders.

6.2.6 Support backward compatibility

Working with existing systems is encouraged, but the revision adds that this should only be done if it can be properly explained. This reinforces the existing statement that further development and innovation do not stand in the way of each other, given the limitations of those existing systems. An example of this principle is the further development of satellite technology (GNSS).

6.2.7 Respect the national infrastructure network

It is clear that there are differences in traffic density, size and weather conditions, and that these can vary greatly (for example, between northern and southern Europe). What is new is that the specific characteristics of infrastructure are now also being taken into account. This suggests that further harmonisation of that infrastructure in Europe will not be a goal in itself for the time being, but that service providers and developers will have to take those specific circumstances into account.

6.2.8 Promoting equality of access

Services and applications must be accessible, including for vulnerable road users and people with disabilities. A new aspect is the addition that the interface must also be user-friendly for people with limited digital knowledge and skills.

6.2.9 Support maturity

The Directive also stipulates that a risk assessment must demonstrate that the system or service is sufficiently robust in terms of both technology and operational qualities. A new requirement is that, where possible, this must now also be demonstrated in real-life conditions. This provision is particularly relevant for vehicle manufacturers, system developers and infrastructure managers with regard to C-ITS services.

6.2.10 Positioning and timing

The existing Directive already stipulated that the European Galileo system must be used to improve positioning and timing, particularly in the field of navigation. The new Directive now also requires the use of other Galileo services, such as the High Accuracy Service.

Earth observation data

Previously, as now, reference is made to 'Earth observation data'. This principle refers to data collected by satellites and other instruments that observe the Earth from space. This data includes various types of information, such as images, measurements and other observations of the Earth and the atmosphere. Earth observation data is often used for scientific purposes, environmental monitoring, weather forecasting, agricultural management, urban planning and numerous other applications. Satellites and other instruments collect this data across different wavelengths, including visible light, infrared, and microwaves. Analysing this data can provide insights into changes in the environment, weather patterns, land use, and physical changes.

High Accuracy Service

Galileo's High Accuracy Service (HAS) refers to an improvement in the precision of positioning provided by the European satellite navigation system Galileo. Galileo is comparable to the American GPS system and offers different levels of accuracy for positioning.

The High Accuracy Service is intended to provide highly accurate positioning, with an estimated precision in the order of a few centimetres. This accuracy can be important for applications that require very precise location information, such as in agriculture, construction, urban planning, and in some cases for autonomous vehicles. It is a complementary service to the regular positioning services offered by Galileo. However, the reality is somewhat more challenging...





Annex II

Objectives:

- Reducing congestion
- Incident management
- Reducing emissions
- Improving energy efficiency
- Improving road safety

To be achieved by:

- Effective measures
- Cost efficiency
- Taking into account region, city and rural area
- Focus on TENT network
- Cross-border networks
- Interoperability through broad use of standards
- Taking into account specific characteristics of the network and circumstances
- Accessibility and user-friendliness
- Demonstrable effective systems and services
- Accurate positioning
- Technology neutral
- Transparent governance and processes.

6.2.11 Facilitate intermodality

There are no changes to the Directive that call for a multimodal approach to ITS services.

6.2.12 Respect coherence

Existing EU regulations and policies relevant to ITS must be taken into account. Directive (EU) 2018/1972 on technological neutrality applies to standardisation and specifications.

6.2.13 Deliver transparency and trust

Trust is important for the sustainable use of the service. The European Commission has therefore added this point about transparency, which must in any case make clear what choices are presented in what order when offering travel options to customers and what the effects of those choices are on the environment. This can be interpreted as promoting the most sustainable travel option in services by placing it high in the ranking, for example in the form of the Dutch STOMP⁸ principle, provided it is relevant to the journey in question. However, we do not yet see any encouragement here to limit business travel and to encourage remote working.

This discussion has not yet been finalised.

In summary, Annex II sets out the principles for achieving the objectives, which can be summarised as follows:

⁸ The STOMP principle is a Dutch urban planning and mobility framework prioritizing sustainable, active transport over private car use. It stands for *Stappen* (Walking), *Trappen* (Cycling), *Openbaar Vervoer* (Public Transport), *Mobility as a Service* (Shared mobility), and *Privéauto* (Private car), aiming to make cars "guests" in design.

6.3 Annex III: List of data types

This annex lists the different data types, their geographical scope and the date from which new or updated data must be available (Updates), and finally when all existing data must also be available.

Member States must ensure that data corresponding to underlying information created or updated on or after the date specified in the third column of Annex III is made available immediately. They must also ensure that, unless otherwise specified in Annex III, other data corresponding to all existing underlying information created or updated before the date specified in the fourth column of that Annex is made available immediately after that date. If no date is specified in the fourth column of Annex III, the applicable dates shall be defined by means of regulations adopted pursuant to Article 7. These deadlines apply only to existing infrastructure. For infrastructure projects completed at a later date, these deadlines shall be understood as the dates of completion. Member States shall ensure that this data is accessible through the National Access Points by the same date. Member States shall also ensure that the ITS services specified in Annex IV are rolled out as early as possible and no later than the respective dates specified in that Annex. The purpose of this provision is to ensure that ITS services achieve good geographical coverage as quickly as possible.

6.3.1 Data types in the RTTI Regulation versus the ITS-Directive

Many of the data types mentioned are also referred to in existing European Commission regulations. A number of the data types mentioned here can therefore be found in the Real-time Traffic Information Regulation (RTTI), the Safety Related Traffic Information Regulation (SRTI), the Safe and Secure Truck Parking (SSTP) Regulation and the Multi Modal Traveller Information Services Regulation (MMTIS).

Although a comparison between the ITS-Directive and a Regulation is not entirely accurate, below is a comparison between the data types in the RTTI Regulation that we now also encounter in the ITS-Directive (priority areas 1.2 and 1.3). The revised ITS-Directive *requires the collection of 'critical data' and the provision of essential services* such as real-time information services that inform drivers about accidents or obstacles on the road. The RTTI Regulation *requires the publication* of certain existing traffic data on a National Access Point. Not all data types included in the RTTI Regulation are therefore included in the ITS-Directive, given the expected effort this would entail for Member States. Incidentally, the same principle also applies to data mentioned in the SRTI, SSTP and MMTIS Regulations.

Compare RTTI Regulation versus ITS-Directive	
Data type RTTI Regulation	Data type ITS-Directive
1. Types of infrastructure data	
a) Roads and their physical characteristics: i. geometry; ii. road width; iii. number of lanes; iv. gradients; v. junctions;	
b) Road classification	
c) Location of toll stations	
d) Location of service areas and rest areas	
e) Location of recharging points for electric vehicles and the conditions for their use	
f) Location of compressed natural gas, liquefied natural gas, liquefied petroleum gas stations	
g) Location of refuelling points and stations for all other fuel types	
h) Location of delivery areas	

Compare RTTI Regulation versus ITS-Directive	
Data type RTTI Regulation	Data type ITS-Directive
2. Key types of data on traffic regulations and restrictions	
a) Static and dynamic traffic regulations, where applicable vi. access conditions for tunnels; vii. access conditions for bridges; viii. permanent access restrictions; ix. speed restrictions; x. freight delivery regulations; xi. overtaking bans on heavy goods vehicles; xii. weight/length/width/height restrictions; xiii. one-way streets; xiv. boundaries of restrictions, prohibitions or obligations with zonal validity, current access status and conditions for circulation in regulated traffic zones; xv. direction of travel on reversible lanes (tidal flows).	■ permanent access restrictions ■ speed limits ■ overtaking bans on heavy goods vehicles ■ weight/length/width/height restrictions ■ one-way streets ■ boundaries of restrictions, prohibitions or obligations with zonal validity, current access status and conditions for circulation in regulated traffic zones ■ direction of travel on reversible lanes
b) Traffic circulation plans	traffic circulation plans

Compare RTTI Regulation versus ITS-Directive	
Data type RTTI Regulation	Data type ITS-Directive
3. Other types of data on traffic regulations and restrictions	
a) The location and identification of traffic signs reflecting traffic regulations and identifying dangers: xvi. access conditions for tunnels xvii. access conditions for bridges; - xviii. permanent access restrictions; xix. other traffic signs reflecting traffic regulations.	■ access conditions for tunnels ■ access conditions for bridges
b) Static and dynamic traffic regulations, where applicable, other than traffic regulations referred to in point (2)	
c) Identification of tolled roads, applicable fixed user charges and available payment methods (including retail channels and fulfilment methods)	
d) Variable road user charges and available payment methods, including retail channels and fulfilment methods.	

Compare RTTI Regulation versus ITS-Directive	
Data type RTTI Regulation	Data type ITS-Directive
4. The crucial types of data on the state of the network:	
a) Road closures	■ Road closures
b) Lane closures	■ Lane closures
c) Roadworks	■ Road works
d) Temporary traffic management measures	■ Temporary traffic management measures

Compare RTTI Regulation versus ITS-Directive	
Data type RTTI Regulation	Data type ITS-Directive
5. Other types of data on the state of the network	
a) Bridge closures	
b) Accidents and incidents	
c) Poor road conditions	
d) Weather conditions affecting road surface and visibility	

Compare RTTI Regulation versus ITS-Directive	
Data type RTTI Regulation	Data type ITS-Directive
6. Types of data on real-time network usage	
a) Traffic volume	
b) Traffic speed	
c) Location and length of traffic queues	
d) Travel times	
e) Waiting time at border crossings	
f) Availability of delivery areas	
g) Availability of recharging points and stations for electric vehicles	
h) Availability of refuelling points and stations for alternative fuel types	
i) Price of ad hoc charging/refuelling	

The ITS-Directive therefore encourages the collection of a number of crucial data types in machine-readable format, while the RTTI Regulation encourages the publication of existing machine-readable data. It should be noted that the geographical scope of the ITS-Directive is limited to the TEN-T, other motorways, the Primary Road Network and Urban Nodes.

The Dutch government has designated the entire road network as a Primary Network. This means that for certain types of data (such as access restrictions for bridges and environmental zones) that must be created for Primary Roads, this could apply to the entire road network in the Netherlands. However, it is possible to limit this to primary roads with a traffic volume of more than 8,500 vehicles per 24 hours and to primary roads in urban nodes with a traffic volume of more than 7,000 vehicles per 24 hours. Further decisions on this matter are still to be made.

Scope			
RTTI-Regulation	ITS-Directive	RTTI-Regulation	ITS-Directive
data		geographical	
Make existing machine-readable data available on NAP	Create certain crucial data in machine-readable format and make it available on NAP	All roads where motorised traffic is permitted (not including private roads)	Primarily the TEN-T network, other motorways and primary roads in urban hubs

6.3.2 Annex III of the ITS-Directive

In Annex III of the ITS-Directive, we see the following data types provided with geographical scope and deadline for availability.

1 Data relating to the provision of EU-wide road traffic information and navigation services (as referred to in Annex I, priority area I, points 1.2 and 1.3).

1.1 Category: static and dynamic traffic rules, where applicable, concerning:

Data type	Geographical scope	Availability of created and updated data on or after: (Article 6a, 1st paragraph, 2nd subparagraph)	Availability of created and updated data from: (Article 6a, 1st paragraph, 3rd subparagraph)
Access conditions for tunnels	■ The trans-European core network for roads	31 december 2025	31 december 2027
Access conditions for bridges			
Speed limits			
Overtaking bans on heavy goods vehicles	■ The extensive trans-European network for roads ■ Other motorways ■ Sections of primary roads, with the total annual average daily traffic is more than 8 500 vehicles ■ All roads in the cities at the centre of each Urban Node (Urban Nodes), including those administered by the cities.	31 december 2026	31 december 2028
Weight/length/width/height restrictions			
One-way streets			
Freight delivery regulations			
Direction of travel on reversible lanes (tidal flow)	■ The core and comprehensive trans-European network for roads ■ Other motorways ■ Sections of primary roads, where the total annual average daily traffic is more than 8 500 vehicles ■ All roads in the cities at the centre of each Urban Node (Urban Nodes), including those administered by the cities	31 december 2026	To be determined in regulations
Traffic circulation plans			
Permanent access restrictions			
Boundaries of restrictions, prohibitions or obligations with zonal validity, current access status and conditions for circulation in regulated traffic zones			

Urban Node: an urban area where the transport infrastructure of the trans-European transport network, such as ports including passenger terminals, airports, railway stations, logistic platforms and freight terminals located in and around an urban area, is connected with other parts of that infrastructure and with the infrastructure for regional and local traffic;

Article 6a(1), second subparagraph: Member States shall ensure that data corresponding to underlying information created or updated on or after the date set out in the third column of Annex III are made available without delay.

Article 6a(1), third subparagraph: Member States shall also ensure that, unless otherwise provided for in Annex III, other data corresponding to all existing underlying information, created or updated before the date set out in the fourth column of that Annex, are made available without delay after that date.

1.2 Category: Data on the state of the network:

Data type	Geographical scope	Availability of created and updated data on or after: (Article 6a, paragraph 1, subparagraph 2)	Availability of created and updated data from before: (Art. 6a, paragraph 1, subparagraph 3)
Road closures	The trans-European core and comprehensive network for roads	31 december 2025	N/A
Lane closures			
Road works			
Temporary traffic management measures	The trans-European core and comprehensive network for roads	31 december 2028	N/A
N/A: these are temporary dates and therefore historical data is not relevant for the intended services (traffic information and navigation)			

2 Data relating to information and reservation services for safe and secure parking places for trucks and commercial vehicles (as referred to in Annex I, priority area III, point 3.2):

Data type	Geographical scope	Availability of created and updated data on or after: (Article 6a, paragraph 1, subparagraph 2)	Availability of created and updated data from before: (Article 6a, paragraph 1, subparagraph 3)
Static data			
Static data related to the parking areas.	The trans-European core network for roads.	31 december 2025	31 december 2026
Information on safety and equipment of the parking area.	The comprehensive trans-European network for roads.	31 december 2026	31 december 2027
Dynamic data			
Dynamic data on availability of parking places including whether a parking is: full, closed or number of free places available.	The trans-European core and comprehensive network for roads.	31 december 2027	N/A

3 Data on detected road safety-related events or conditions relating to road-safety-related minimum universal traffic information (as referred to in Annex I, Priority area III, paragraph 3.3):

Data type	Geographical scope	Availability of created and updated data on or after: (Article 6a, paragraph 1, subparagraph 2)	Availability of created and updated data from before: (Article 6a, paragraph 1, subparagraph 3)
Dynamic data			
Temporary slippery road	The core and comprehensive trans-European network for roads and other motorways not included in that network	31 december 2025	N/A
Animal, people, obstacles and debris on the road			
Unprotected accident area			
Short-term road works			
Wrong-way driver			
Unmanaged blockage of a road			
Reduced visibility		31 december 2026	
Exceptional weather conditions			

4 Static multimodal traffic data for EU-wide multimodal travel information services (as referred to in Annex I, Priority area I, paragraphs 1.1 and 1.3):

Data type	Geographical scope	Availability of created and updated data on or after: (Article 6a, paragraph 1, subparagraph 2)	Availability of created and updated data from before: (Article 6a, paragraph 1, subparagraph 3)
Static data			
Location of identified access nodes for all scheduled modes, including information on accessibility of access nodes and paths within an interchange (such as existence of lifts, escalators)	Urban nodes, including those administered by the cities.	31 december 2026	To be determined in regulations
	The entire transport network of the Union.	31 december 2028	

6.4 Annex IV: List of ITS services

Service	Geographical scope	Date
Road safety-related minimum universal traffic information (SRTI) service as referred to in Annex I, priority area III, paragraph 3.3	The core and comprehensive trans-European network for roads	31 december 2026

7 The priority areas

These tables below provide a structured overview of the key roles and responsibilities associated with each priority area of the ITS Directive (2024). For each action, they identify the primary actors responsible for implementation ("By") and the intended end users or beneficiaries ("For").

The "What" column concisely describes the nature of the activity or obligation, while the "By" and "For" columns clarify, respectively, which stakeholders are expected to take the lead and which stakeholders ultimately benefit from the outcomes. This approach offers a clear representation of the value chain, from data provision and exchange to the delivery of services for travellers and mobility service providers.

By explicitly distinguishing these roles, the tables support a common understanding of responsibilities, facilitate coordination among stakeholders, and highlight the interdependencies between public authorities and private actors in the development and deployment of EU-wide multimodal digital mobility services.

Priority area I

Information and mobility ITS services

1.1 Specifications for EU-wide multimodal digital mobility services (including EU-wide multimodal travel information services)

The definition of the necessary requirements to make EU-wide multimodal digital mobility services and similar services providing information, booking or purchasing features for more than one transport operator within the same mode of transport accurate and available across borders to ITS users, based on:

Nr	Item	What	By		For
1.1.1	Availability and accessibility	The availability and accessibility of existing and accurate multimodal traffic and travel data , used for multimodal digital mobility services to ITS service providers without prejudice to safety and transport management constraints	Data holders		ITS service providers
1.1.2	Exchange	The facilitation of the electronic data exchange between the relevant public authorities and stakeholders and the relevant ITS service providers, across borders, in particular through standardised interfaces	Road authorities	Public transport authorities	(Inter)national service providers
1.1.3	Updating	The timely updating by the relevant public authorities and stakeholders of available multimodal traffic and travel data , used for multimodal digital mobility services	Road authorities	Public transport authorities	Mobility service providers
1.1.4	Updating	The timely updating of multimodal travel information , including information related to booking and purchasing where relevant of transport services, by the ITS service providers	ITS service providers		Travellers

Priority area I

Information and mobility ITS services

1.2 Specifications for EU-wide road traffic information and navigation services (including EU-wide real-time traffic information services)

The definition of the necessary requirements to make EU-wide road traffic information and navigation services accurate and available across borders to ITS users, based on:

Nr	Item	What	By	For
1.2.1	Availability and accessibility	The availability and accessibility of existing and accurate road and traffic data , including real-time data, used for real-time traffic information to ITS service providers and other relevant stakeholders, and for use in digital maps, without prejudice to safety and transport management constraints	Data holders	ITS service providers
1.2.2	Exchange	The facilitation of the electronic data exchange between the relevant public authorities, stakeholders and the relevant ITS service providers, across borders, including feedback on quality of data	Govern-ment agencies	ITS service providers (Inter)national ITS service providers Govern-ment agencies
1.2.3	Updating	The timely updating of available road and traffic data used for real-time traffic information by the relevant public authorities and stakeholders	Government agencies	ITS service providers
1.2.4	Update	The timely updating of real-time traffic information to road users and other relevant stakeholders by the ITS service providers	Data holders	Road users

Priority area I

Information and mobility ITS services

1.3.1 The definition of the necessary requirements for the collection by relevant public authorities and/or, where relevant, by the private sector of road and traffic data (i.e. traffic circulation plans, traffic regulations and recommended routes, notably for heavy goods vehicles) and for their provisioning to ITS service providers, based on:

Nr	Item	What	By	For
1.3.1.1	Availability and accessibility	The availability and accessibility, to ITS service providers, of existing road and traffic data (i.e. traffic circulation plans, traffic regulations and recommended routes) collected by the relevant public authorities and/or the private sector	Government agencies	ITS service providers
1.3.1.2	Exchange	The facilitation of the electronic data exchange between the relevant public authorities and the ITS service providers and other relevant stakeholders	Government agencies	(Inter)national ITS service providers
1.3.1.3	Updating	The timely updating, by the relevant public authorities and/or, where relevant, the private sector, of road and traffic data (i.e. traffic circulation plans, traffic regulations and recommended routes)	Government agencies	ITS service providers
1.3.1.4	Updating	The timely updating, by the ITS service providers, of the ITS services and applications using these road and traffic data	ITS service providers	Collective

Priority area I

Information and mobility ITS services

1.3.2 The definition of the necessary requirements to make road, traffic and relevant travel and multimodal infrastructure data used for digital maps accurate and available, where possible, to digital map producers and service providers, based on:

Nr	Item	What	By	For
1.3.2.1	Availability and accessibility	The availability and accessibility of existing road, traffic and relevant travel and multi-modal infrastructure data , including identified access nodes, used for digital maps to digital map producers and service providers	Government agencies	Map producers and ITS service providers
1.3.2.2	Exchange	The facilitation of the electronic data exchange between the relevant public authorities and stakeholders and the private digital map producers and service providers	Government agencies	Map producers and (inter)national ITS service providers
1.3.2.3	Updating	The timely updating of road and traffic data for digital maps by the relevant public authorities and stakeholders	Government agencies	Map producers and ITS service providers
1.3.2.4	Updating	The timely updating of the digital maps by the digital map producers and service providers	Map producers and ITS service providers	End users

Priority area II

Travel, transport and traffic management ITS services

The specifications and standards for travel, transport and traffic management ITS services shall include the following:

2.1 Specifications for enhanced traffic and incident management services

The definition of the necessary requirements to support and harmonise enhanced traffic and incident management services, based on:

Nr	Item	What	By	For
2.1.1	Availability and accessibility	The availability and accessibility of existing and accurate road and traffic data and data on accidents and incidents needed for traffic and incident management services	Data holders	Traffic and incident management services
2.1.2	Exchange	The facilitation of electronic data exchange, including freight data relevant for the traffic and incident management (e.g. carriage of dangerous goods, goods-related access restrictions, oversized carriages), between traffic management centres, traffic information centres, stakeholders and the relevant ITS service providers, across borders, in particular through standardised interfaces	Traffic management centre, traffic information centres	(Inter)national ITS service providers
2.1.3	Updating	The timely updating of available road and traffic data and data on accidents and incidents needed for enhanced traffic and incident management services by the relevant stakeholders	Data holders	Traffic and incident management services
2.1.4	Availability and accessibility	The availability and accessibility of data and synergies with other initiatives aimed at supporting multimodality, integration of modes and the facilitation of modal shift on the European transport network towards the most sustainable modes of transport, through the harmonisation and facilitation of data sharing	Data holders	End user

Priority area II

Travel, transport and traffic management ITS services

2.2 Specifications for mobility management services

The definition of the necessary requirements to support the development of accurate mobility management services by public transport authorities, based on:

Nr	Item	What	By	For
2.2.1	Availability and accessibility	The availability and accessibility, in a standardised format, of existing, accurate road and multimodal travel and traffic data needed for mobility management, to the relevant public authorities without prejudice to data protection requirements	Public transport authorities	Government agencies
2.2.2	Exchange	The facilitation of electronic data exchange between the relevant public authorities and stakeholders and the relevant ITS service providers, across borders	Government agencies	(Inter)national ITS service providers
2.2.3	Updating	The timely updating of available road and multimodal travel and traffic data needed for mobility management by the relevant public authorities and stakeholders	Data holders	Government agencies

2.3 Developing an EU ITS framework architecture, addressing specifically ITS-related aspects of:

- Interoperability
- Continuity of services
- Multimodality

within which Member States and their competent authorities in cooperation with the private sector can develop their own ITS architecture for mobility at:

- National level
- Regional level
- Local level

2.4 ITS applications and freight transport logistics

The definition of the necessary requirements to support the realisation of ITS applications for freight transport logistics, in particular the tracking and tracing of freight and other visibility services along its journey and across modes of transport, based on:

Nr	Item	What	By	For
2.4.1	Availability	The availability of relevant ITS technologies to and their use by ITS application developers	Developers of ITS technologies	Developers of ITS applications
2.4.2	Availability	The availability of cargo related data , accessible through other specific data sharing frameworks	Data holders	Developers of ITS applications
2.4.3	Integration	The integration of positioning results in the traffic management tools and centres	Traffic management centre	End user or collective

Priority area III

Road safety and safety of ITS services

The specifications and standards for road safety and security ITS services shall include the following:

3.1 Specifications for the interoperable EU-wide eCall

Nr	Item	What	By	For
3.1.1	Availability	The availability of the required in-vehicle ITS data to be exchanged	Vehicle manufacturers	Data user
3.1.2	Availability	The availability of the necessary equipment in the emergency call response centres receiving the data emitted from the vehicles	Control rooms	Emergency services
3.1.3	Integration	The facilitation of the electronic data exchange between the vehicles and the emergency call response centres, including possible interaction with data in the scope of Regulation (EU) 2020/1056 and with e-CMR, for instance in the case of dangerous goods	Vehicle manufacturers	Control rooms

3.2 Specifications for information and reservation services for safe and secure parking places for trucks and commercial vehicle

The definition of the necessary measures to provide ITS based information and, where available, reservation services for safe and secure parking places for trucks and commercial vehicles, in particular in service and rest areas on roads, based on:

Nr	Item	What	By	For
3.2.1	Availability	The availability of the road parking information to users	Data holder	Drivers
3.2.2	Exchange	The facilitation of the electronic data exchange between road parking sites and spaces, centres and vehicles	Data holder	Drivers
3.2.3	Integrating and updating	The integration of relevant ITS technologies in both vehicles and road parking facilities to update the information on available parking space for reservation purposes	Vehicle manufacturers	Parking management

3.3 Specifications for road safety-related minimum universal traffic information

The definition of minimum requirements, for road safety-related 'universal traffic information' provided, where possible, free of charge to all users, as well as their minimum content, based on:

Nr	Item	What	By	For	
3.3.1	Availability and accessibility	The availability and accessibility of accurate data on safety-related events and conditions needed for safety-related traffic information and incident management services	Data holders	End user	Incident management services
3.3.2	Deployment	The deployment or use of the means to detect or identify safety-related events and conditions			
3.3.3	Identification and use	The identification and use of a standardised list of safety-related traffic events ('universal traffic messages') which should be communicated to ITS users free of charge	Data holders	End user	
3.3.4	Integration and compatibility	The compatibility and the integration of 'universal traffic messages' into ITS services for real-time traffic and multimodal travel information	ITS service provider	Driver and traveller	

3.4 Specifications for other actions

Nr	Item	What	By		For
3.4.1	Measures to support safety	The definition of the necessary measures to support the safety of road users with respect to their on-board Human-Machine Interface and the use of nomadic devices including cell phones, to support the driving task and/or the transport operation, as well as the security of the in-vehicle communications which fall outside the scope of Regulations (EU) No 167/2013, (EU) No 168/2013 and (EU) 2018/858 of the European Parliament and of the Council	Government agencies		Road users
3.4.2	Measures to improve the safety and comfort	The definition of the necessary measures to improve the safety and comfort of vulnerable road users for all relevant ITS applications which fall outside the scope of Regulations (EU) No 167/2013, (EU) No 168/2013 and (EU) 2018/858	Government agencies	ITS service provider	Cyclists and pedestrians
3.4.3	Data exchange	The definition of the necessary measures to integrate advanced driver support information systems into vehicles and road infrastructure which fall outside the scope of Regulations (EU) No 167/2013, (EU) No 168/2013 and (EU) 2018/858	ITS service provider		ITS service provider
3.4.4	Exchange of information	The definition of the necessary measures to facilitate the exchange of information between services providers of security ITS applications , such as support to recover stolen vehicles or goods, and relevant public authorities, taking due account of other existing and emerging frameworks aimed at facilitating data sharing in mobility and transport which fall outside the scope of Regulations (EU) No 167/2013, (EU) No 168/2013 and (EU) 2018/858	ITS service provider		Government agencies

Priority area IV

ITS services for cooperative, connected and automated mobility

4.1 The definition of necessary measures to further progress the development and implementation of cooperative (vehicle-vehicle, vehicle-infrastructure, infrastructure-infrastructure) intelligent transport systems, in particular to support CCAM, based on:

Nr	Item	What	By	For
4.1.1	Exchange of data information	The facilitation of the exchange of data or information between vehicles, between infrastructures and between vehicles and infrastructures and between other road users and vehicles and infrastructures	Vehicle	Vehicle
			Infrastructure	Infrastructure
			Vehicle	Infrastructure
			Infrastructure	Vehicle
			Other road users	Vehicle
			Vehicle	Other road users
			Other road users	Infrastructure
			Infrastructure	Other road users
4.1.2	Availability of data	The availability of the relevant data or information to be exchanged to the respective vehicle or road infrastructure parties	Vehicle	Infrastructure
			Infrastructure	Vehicle
4.1.3	Standardised message format	The use of a standardised message format for the exchange of data or information between the vehicle and the infrastructure	Vehicle	Infrastructure
			Infrastructure	Vehicle
4.1.4	Digital infrastructure	The definition of an accurate and reliable communication infrastructure for data or information exchange between vehicles, between infrastructures and between vehicles and infrastructures	Vehicle	Vehicle
			Infrastructure	Infrastructure
			Vehicle	Infrastructure
4.1.5	Open market	The use of standardisation processes to adopt the respective architectures	Market parties	Market parties

4.2 Specifications for services

Nr	Item	What	By		For
4.2.1	Awareness of upcoming traffic situations	C-ITS information and warning services based on status data that increase the awareness of transport users of upcoming traffic situations	C-ITS service providers		Mobility users (connected)
4.2.2	Additional information	C-ITS information and warning services based on observations that further increase the awareness of transport users on upcoming traffic situations, including non-connected transport users	C-ITS service providers	Traffic management centres	Mobility users (connected and unconnected)
4.2.3	Enabling highly automated driving	C-ITS services based on intentions that allow vehicles to deal with complex traffic scenarios and enable highly automated driving	Vehicles		C-ITS service providers
4.2.4	Supporting automated driving	C-ITS infrastructure services to support automated driving	Government agencies	C-ITS service providers	Vehicles

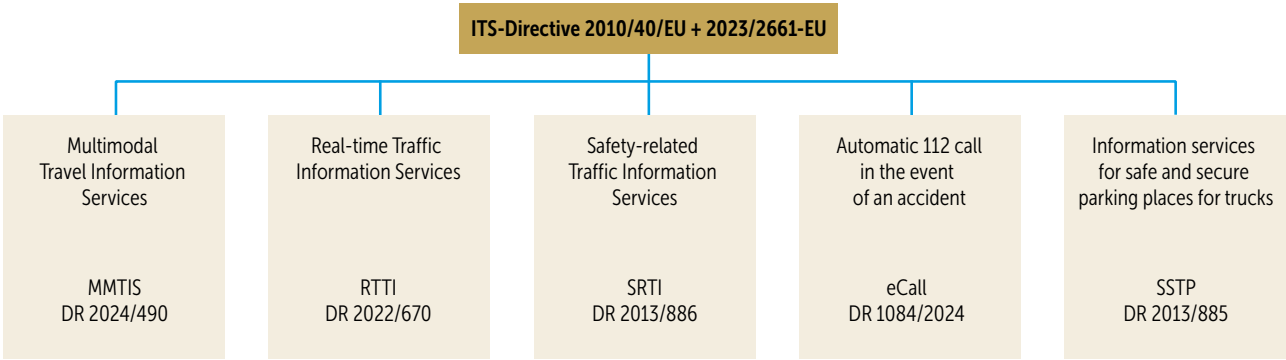
4.3 Specifications for the EU C-ITS security credential management system

Nr	Item	What	By	For
4.3.1	Certification policy	Certificate policy for the management of public key certificates for C-ITS services	Government agencies	C-ITS service providers
4.3.2	Certification process	Laying down the role of the C-ITS certificate policy authority, the C-ITS trust list manager and the C-ITS point of contact	Government agencies	C-ITS service providers
4.3.3	Information security policy	Security policy for the management of information security in C-ITS	Government agencies	C-ITS service providers

Appendix I Regulations under the ITS-Directive

As described, a number of further elaborations of the ITS-Directive are contained in so-called Delegated Regulations or regulations.

The following regulations have currently been adopted:



- EC DR2024/490 MMTIS 29-11-2023 (is an amendment to DR2017/1962)
- EC DR2022/670 RTTI 2 February 2022
- C-ITS 11 January 2019ⁱ
- EC DR2017/1926 MMTIS 31 May 2017
- EC DR2015/962 RTTI 18 December 2014ⁱⁱ
- EC DR885/2013 SSTP 15 May 2013ⁱⁱⁱ
- EC DR886/2013 SRTI 15 May 2013^{iv}
- EC DR1084/2024 eCall 12 April 2024

The DATEX II Recommended Reference Profiles for SRTI, RTTI and MMTIS regulations can be found here:
https://docs.datex2.eu/reference_profiles/rrp/index.html

ⁱ Not adopted in 2019, and not expected to be adopted before 2026.
It is expected that there will be a breakdown into three C-ITS specifications

ⁱⁱ Expires on 1 January 2025

ⁱⁱⁱ Scheduled for revision in 2026/2027

^{iv} Scheduled for revision in 2025/2026

Appendix II Decision-making

On 23 October 2023, the revised ITS-Directive 2023/2661 was adopted by Parliament. This should be seen as an amendment, or modification, of the existing ITS-Directive 2010/40/EU. This chapter provides a brief overview of the decision-making process.

5.1 The European Commission

On 14 December 2021, the European Commission published the proposal for a revised Directive. The proposal extends the scope of the ITS-Directive:

- To give travellers access to data from emerging services such as multimodal booking and ticketing apps;
- To improve communication between vehicles and infrastructure (to increase safety) and facilitate automated mobility;
- Enabling the mandatory collection of 'essential (traffic) data' and the provision of essential information services (such as real-time safety information for drivers about accidents or obstacles on the road);
- With a clear, adapted interpretation of the priority areas within which further regulations can be drawn up.

Where possible, data should be anonymised; where this is not possible, personal data should be processed in accordance with GDPR rules.

5.2 The European Council

On 2 June 2022, the European Council adopted a general approach. According to their position, countries should introduce intelligent transport systems (ITS) step by step and in a coherent manner, taking into account costs and benefits. The aim is to give Member States more control over the conditions of the new rules, especially regarding where and when data and services should be available. In doing so, the Council emphasises that personal data must be properly protected. It is also important to use anonymous data as much as possible. And the additional efforts required of companies to provide the necessary information must be taken into account.

5.3 The European Parliament

In the European Parliament, the Committee on Transport and Tourism (TRAN) took the lead on the dossier, with Rovana Plumb (S&D, Romania) as rapporteur. On 26 October 2022, the TRAN Committee adopted its report, which emphasised the following:

- The development of ITS must also cover the needs of suburbs, rural and remote areas;
- Specifications must be system-independent and not based on specific technologies;
- The data in the national access points (NAPs) must be provided in static and dynamic format, in a standardised, interoperable and harmonised manner;

- The electronic consignment note (eCMR) must be integrated into the emergency call system (eCall) to provide emergency services with all the necessary information about the goods in the vehicle;
- It must be determined how vehicles communicate with each other and with systems, roads and the environment. This includes establishing standard ways of sending and receiving messages;
- The provision of operational data by road transport operators must always be voluntary, and providers must have the right to choose how they wish to exchange it with consumers.

On 8 June 2023, the European Council and the European Parliament reached a provisional agreement on the implementation of intelligent transport systems (ITS) to accelerate the digital transition and smarter mobility in the EU.

On 23 October 2023, the European Parliament adopted the ITS-Directive. This will be followed by translations of the Directive and its publication. According to its statement, the European Parliament wants to stimulate the digital transition to smarter mobility in the EU.

Appendix III (revised) MMTIS-Regulation

MMTIS stands for 'Multimodal Travel Information Services' and aims to make travel information more accessible to travellers, especially when they use different modes of transport during their journey. The regulation governs the accessibility of data such as timetables, routes and other relevant information relating to different modes of transport, so that travellers can make informed decisions about their journeys.



The aim is to facilitate multimodal travel and reduce dependence on private cars by enabling more efficient and sustainable transport options to be offered.

On 29 November 2023, the European Commission announced the revision of the regulations concerning the EU-wide multimodal travel information service (MMTIS) as part of the Passenger Mobility Package. The proposal for the revised MMTIS Regulation focuses in particular on obligations for holders of dynamic information, such as real-time disruptions, to also make this information available on NAPs. These changes will make it easier for passengers to find accurate travel information. In addition, new types of data on issues such as cycling facilities, parking and accessibility for people with disabilities have been included in the revised MMTIS Regulation. The revision has now been completed and adopted.

For more information, see: https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_6112

Appendix IV (Revised) RTTI-Regulation

RTTI stands for 'Real Time Traffic Information'. A regulation with specific rules and implementation details relating to real-time traffic information and related aspects. Data source holders are obliged to provide this data in real time and in good quality. Service providers must then also incorporate this data into their services, provided that the data is of good quality and usable. The regulations aim to promote dialogue between data holders and data users, with both parties being responsible for the quality of the data in the process.

For more information, see: <https://crow-smartmobility.nl/kenniscatalogus/real-time-traffic-information/>



Appendix V SRTI-Regulation



This regulation lays down the specifications necessary to ensure compatibility, interoperability and continuity for the implementation and operational use of data and procedures for the provision, where possible, of minimum universal traffic information related to road safety free of charge to users at European level on the basis of the provisions of the ITS-Directive.

ITS-Directive requires the creation of these types of data (provided that the underlying information is available) and the introduction of SRTI services, thereby taking a step towards a EU-wide coverage of adequate SRTI services.

Appendix VI eCall Regulation

eCall is a system used in vehicles in the EU that automatically and free of charge calls the emergency number 112 in the event of serious accidents. Manual activation is also possible. Regardless of the vehicle's registration or purchase location, eCall connects to the nearest emergency call centre. Upon activation, essential data such as location and vehicle information, to facilitate assistance.

New car models registered after 31 March 2018 must have eCall. Installation is not mandatory for existing cars, but optional if they meet technical requirements.

eCall is only activated in the event of serious accidents. No data is transmitted during normal driving. In the event of an emergency call, personal data is processed in accordance with EU data protection regulations. The data is not stored for longer than necessary and is then completely deleted to ensure privacy.

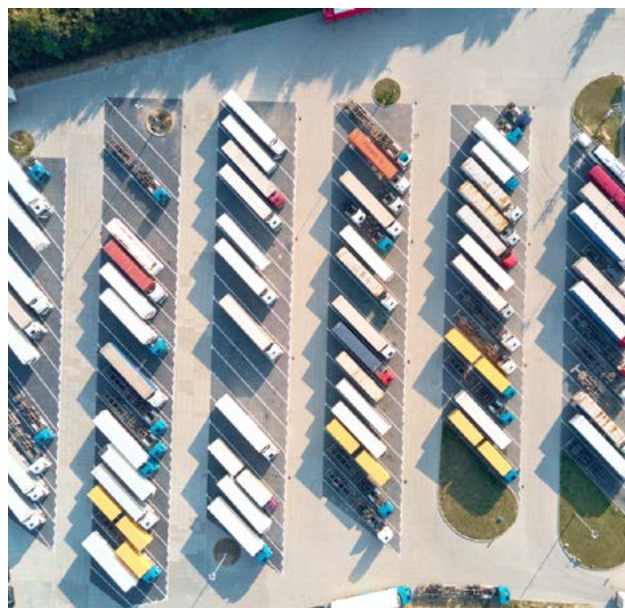
For more information, see: https://europa.eu/youreurope/citizens/travel/security-and-emergencies/emergency-assistance-vehicles-eCall/index_nl.htm



Appendix VII SSTP-Regulation

Much of Europe's freight transport takes place by road. Despite its success in terms of volume, the sector faces significant challenges in terms of safety, working conditions and an ageing workforce. A large proportion of road freight transport is carried out by heavy goods vehicles travelling long distances and crossing borders. However, unattractive working conditions and inadequate security affect the attractiveness of the profession and the recruitment of drivers, which ultimately affects the prosperity of the sector. In addition, cargo crime causes significant financial and reputational losses for supply chain operators. Safe and secure parking areas for lorries can help tackle cargo crime and improve working conditions and road safety for drivers.

For more information, see: <https://eu-parkings.eu/>



Colophon

ITS-Directive – A review of the EU Directive on Intelligent Transport Systems for road and transport authorities

[expenditure](#)

CROW, Ede

[item number](#)

K-D148-EN

[text](#)

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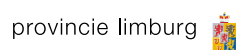
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This publication was made possible with the contribution of the KpVV program. This program develops, disseminates, and safeguards collective knowledge in the field of mobility and is funded by the transport regions and provinces.



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