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ANNEXES 1 to 4

ANNEXES

to the

Proposal for a Directive of the European Parliament and of the Council

amending Directive 2010/40/EU on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport

{SEC(2021) 436 final} - {SWD(2021) 474 final} - {SWD(2021) 475 final}

ANNEX I
PRIORITY AREAS
(as referred to in Article 2)

1. Priority area I: Information and mobility ITS services

The specifications and standards for information and mobility ITS services for passengers shall include the following:

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:

- 1.1.1. 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;
- 1.1.2. 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;
- 1.1.3. the timely updating by the relevant public authorities and stakeholders of available multimodal traffic and travel data, used for multimodal digital mobility services;
- 1.1.4. the timely updating of multimodal travel information, including information related to booking and purchasing of transport services, by the ITS service providers.
- 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:

- 1.2.1. 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;
- 1.2.2. 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;
- 1.2.3. the timely updating of available road and traffic data used for real-time traffic information by the relevant public authorities and stakeholders;
- 1.2.4. the timely updating of real-time traffic information to road users and other relevant stakeholders by the ITS service providers.
- 1.3. Specifications for EU-wide multimodal digital mobility services and road traffic information and navigation 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:

- 1.3.1.1. the availability, 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;
- 1.3.1.2. the facilitation of the electronic data exchange between the relevant public authorities and the ITS service providers and other relevant stakeholders;
- 1.3.1.3. 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);
- 1.3.1.4. the timely updating, by the ITS service providers, of the ITS services and applications using these road and traffic data.
- 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:
 - 1.3.2.1. the availability of existing road, traffic and relevant travel and multimodal infrastructure data, including identified access nodes, used for digital maps to digital map producers and service providers;
 - 1.3.2.2. the facilitation of the electronic data exchange between the relevant public authorities and stakeholders and the private digital map producers and service providers;
 - 1.3.2.3. the timely updating of road and traffic data for digital maps by the relevant public authorities and stakeholders;
 - 1.3.2.4. the timely updating of the digital maps by the digital map producers and service providers.

2. 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:

- 2.1.1. 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;
- 2.1.2. the facilitation of electronic data exchange, including freight data, between traffic management centres, traffic information centres, stakeholders and the relevant ITS service providers, across borders, in particular through standardised interfaces;
- 2.1.3. 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;

- 2.1.4. the availability of data and synergies with other initiatives aimed at harmonising and facilitating data sharing¹, as well as supporting multimodality, integration of modes and optimising the modal balance on the European transport network.

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:

- 2.2.1. the availability and accessibility of existing and accurate road and multimodal travel and traffic data needed for mobility management, to the relevant public authorities without prejudice to data protection requirements;
- 2.2.2. the facilitation of electronic data exchange between the relevant public authorities and stakeholders and the relevant ITS service providers, across borders;
- 2.2.3. the timely updating of available road and multimodal travel and traffic data needed for mobility management by the relevant public authorities and stakeholders.

2.3. EU ITS framework architecture

The definition of the necessary measures to develop an EU ITS framework architecture, addressing specifically ITS-related interoperability, continuity of services and multimodality aspects, within which Member States and their competent authorities in cooperation with the private sector can develop their own ITS architecture for mobility at national, regional or 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:

- 2.4.1. the availability of relevant ITS technologies to and their use by ITS application developers;
- 2.4.2. the availability of cargo related data, accessible through other specific data sharing frameworks²;
- 2.4.3. the integration of positioning results in the traffic management tools and centres.

3. Priority area III: Road safety and security 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

The definition of the necessary measures for the harmonised provision of an interoperable EU-wide eCall, including:

- 3.1.1. the availability of the required in-vehicle ITS data to be exchanged;
- 3.1.2. the availability of the necessary equipment in the emergency call response centres receiving the data emitted from the vehicles;

¹ Such as Regulation (EU) 2020/1056 of the European Parliament and of the Council of 15 July 2020 on electronic freight transport information (OJ L 249, 31.7.2020, p. 33), and the work pursued by the Digital Transport and Logistics Forum (DTLF).

² Such as Regulation (EU) 2020/1056.

- 3.1.3. the facilitation of the electronic data exchange between the vehicles and the emergency call response centres.
- 3.2. Specifications for information and reservation services for safe and secure parking places for trucks and commercial vehicles

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

- 3.2.1. the availability of the road parking information to users;
- 3.2.2. the facilitation of the electronic data exchange between road parking sites and spaces, centres and vehicles;
- 3.2.3. the integration of relevant ITS technologies in both vehicles and road parking facilities to update the information on available parking space for reservation purposes.
- 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:

- 3.3.1. the availability and accessibility of accurate data on safety-related events needed for safety-related traffic information and incident management services;
- 3.3.2. the deployment or use of the means to detect or identify safety-related conditions;
- 3.3.3. 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;
- 3.3.4. the compatibility and the integration of ‘universal traffic messages’ into ITS services for real-time traffic and multimodal travel information.

3.4. Specifications for other actions

- 3.4.1. 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 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 Regulation (EU) 2018/858 of the European Parliament and of the Council³, Regulation (EU) No 167/2013 of the European Parliament and of the Council⁴ and Regulation (EU) No 168/2013 of the European Parliament and of the Council⁵.
- 3.4.2. 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 Regulation (EU) 2018/858 of the European Parliament and of the Council,

³ Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC (OJ L 151, 14.6.2018, p. 1).

⁴ Regulation (EU) No 167/2013 of the European Parliament and of the Council of 5 February 2013 on the approval and market surveillance of agricultural and forestry vehicles (OJ L 60, 2.3.2013, p. 1).

⁵ Regulation (EU) No 168/2013 of the European Parliament and of the Council of 15 January 2013 on the approval and market surveillance of two- or three-wheel vehicles and quadricycles (OJ L 60, 2.3.2013, p. 52).

Regulation (EU) No 167/2013 of the European Parliament and of the Council and Regulation (EU) No 168/2013 of the European Parliament and of the Council.

- 3.4.3. The definition of necessary measures to integrate advanced driver support information systems into vehicles and road infrastructure which fall outside the scope of Regulation (EU) 2018/858 of the European Parliament and of the Council, Regulation (EU) No 167/2013 of the European Parliament and of the Council and Regulation (EU) No 168/2013 of the European Parliament and of the Council.
- 3.4.4. 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 Regulation (EU) 2018/858 of the European Parliament and of the Council, Regulation (EU) No 167/2013 of the European Parliament and of the Council and Regulation (EU) No 168/2013 of the European Parliament and of the Council.

4. Priority area IV: Cooperative, connected and automated mobility services

The specifications and standards for linking vehicles with the transport infrastructure, raising awareness and enabling highly automated mobility services, shall include the following, without prejudice to specifications and standards in Regulation (EU) 2018/858 of the European Parliament and of the Council, Regulation (EU) No 167/2013 of the European Parliament and of the Council and Regulation (EU) No 168/2013 of the European Parliament and of the Council:

- 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, based on:
 - 4.1.1. the facilitation of the exchange of data or information between vehicles, between infrastructures and between vehicles and infrastructures;
 - 4.1.2. the availability of the relevant data or information to be exchanged to the respective vehicle or road infrastructure parties;
 - 4.1.3. the use of a standardised message format for the exchange of data or information between the vehicle and the infrastructure;
 - 4.1.4. the definition of a communication infrastructure for data or information exchange between vehicles, between infrastructures and between vehicles and infrastructures;
 - 4.1.5. the use of standardisation processes to adopt the respective architectures.
- 4.2. Specifications for services
 - 4.2.1. C-ITS information and warning services based on status data that increase the awareness of transport users of upcoming traffic situations;
 - 4.2.2. 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;
 - 4.2.3. C-ITS services based on intentions that allow vehicles to deal with complex traffic scenarios and enable highly automated driving;
 - 4.2.4. C-ITS infrastructure services to support automated driving.
- 4.3. Specifications for the EU C-ITS security credential management system

- 4.3.1. certificate policy for the management of public key certificates for C-ITS services;
- 4.3.2. laying down the role of the C-ITS certificate policy authority, the C-ITS trust list manager and the C-ITS point of contact;
- 4.3.3. security policy for the management of information security in C-ITS.’.

ANNEX II

PRINCIPLES FOR SPECIFICATIONS AND DEPLOYMENT OF ITS

(as referred to in Articles 5, 6, 7 and 8)

The adoption of specifications, the issuing of mandates for standards and the selection and deployment of ITS applications and services shall be based upon an evaluation of needs involving all relevant stakeholders, and shall comply with the following principles. These measures shall:

(a)	be effective	–	make a tangible contribution towards solving the key challenges affecting road transportation in Europe (e.g. reducing congestion, lowering of emissions, improving energy efficiency, attaining higher levels of safety and security including vulnerable road users);
(b)	be cost-efficient	–	optimise the ratio of costs in relation to output with regard to meeting objectives;
(c)	be proportionate	–	provide, where appropriate, for different levels of achievable service quality and deployment, taking into account the local, regional, national and European specificities;
(d)	support continuity of services	–	ensure seamless services across the Union, in particular on the trans-European network, and where possible at its external borders, when ITS services are deployed. Continuity of services should be ensured at a level adapted to the characteristics of the transport networks linking countries with countries, and where appropriate, regions with regions and cities with rural areas;
(e)	deliver interoperability	–	ensure that systems and the underlying business processes have the capacity to exchange data and to share information and knowledge to enable effective ITS service delivery;
(f)	support backward compatibility	–	ensure, where appropriate, the capability for ITS systems to work with existing systems that share a common purpose, without hindering the development of new technologies and while supporting, where relevant, the complementarity with or transition to new technologies;
(g)	respect existing national infrastructure and network characteristics	–	take into account the inherent differences in the transport network characteristics, in particular in the sizes of the traffic volumes and in road weather conditions;
(h)	promote equality of access	–	do not impede or discriminate against access to ITS applications and services by vulnerable road users. Where relevant, be accessible for persons with disabilities in line with the accessibility requirements of Annex I of Directive

			2019/882 when the ITS applications and services are meant to interface or provide information to ITS users with disabilities;
(i)	support maturity	–	demonstrate, after appropriate risk assessment, the robustness of innovative ITS systems, through a sufficient level of technical development and operational exploitation;
(j)	deliver quality of timing and positioning	–	<p>ensure the compatibility of ITS applications and services, which rely on timing or positioning, with at least the navigation services provided by the Galileo, including Open Service navigation Message Authentication, when such service becomes available, and the European Geostationary Navigation Overlay Service ('EGNOS') systems.</p> <p>Where appropriate, ensure that ITS applications and services relying on Earth observation data use Copernicus data, information or services. Other data and services may additionally be used in addition to Copernicus data;</p>
(k)	facilitate inter-modality	–	take into account the coordination of various modes of transport, where appropriate, when deploying ITS;
(l)	respect coherence	–	take into account existing Union rules, policies and activities which are relevant in the field of ITS, in particular in the field of standardisation;
(m)	deliver transparency and trust	–	ensure transparency of ranking when proposing mobility options to the customers.

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ANNEX III

List of data types

Data type	Geographical coverage	Date
Types of data on regulations and restrictions (as referred to in Commission Delegated Regulation (EU) 2015/962⁶):		
Static and dynamic traffic regulations, where applicable, including: <ul style="list-style-type: none"> - access conditions for tunnels - access conditions for bridges - speed limits - freight delivery regulations - overtaking bans on heavy goods vehicles - direction of travel on reversible lanes 	The trans-European network for roads, other motorways not included in that network and primary roads	31 December 2025
	The entire road network of the EU that is publicly accessible to motorised traffic, with the exception of private roads	31 December 2028
- traffic circulations plans	The entire road network that is publicly accessible to motorised traffic	31 December 2025
- permanent access restrictions	The entire road network that is publicly accessible to motorised traffic	31 December 2025
Types of data on the state of the network (as referred to in Commission Delegated Regulation (EU) 2015/962):		
<ul style="list-style-type: none"> - road closures - lane closures - roadworks - temporary traffic management measures 	The trans-European network for roads, other motorways not included in that network and primary roads	31 December 2025
	The entire road network of the EU that is publicly accessible to motorised traffic, with the exception	31 December 2028

⁶ Commission Delegated Regulation (EU) 2015/962 of 18 December 2014 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide real-time traffic information services (OJ L 157, 23.6.2015, p. 21).

	of private roads	
Types of data on safe and secure parking places for trucks and commercial vehicles (as referred to in Commission Delegated Regulation (EU) No 885/2013⁷):		
<ul style="list-style-type: none"> - static data related to the parking areas - information on safety and equipment of the parking area - dynamic data on availability of parking places including whether a parking is: full, closed or number of free places available. 	The trans-European network for roads and other motorways not included in that network	31 December 2025
Data on detected road safety-related events or conditions (as referred to in Commission Delegated Regulation (EU) No 886/2013⁸):		
<ul style="list-style-type: none"> - temporary slippery road - animal, people, obstacles, debris on the road - unprotected accident area - short-term road works - reduced visibility - wrong-way driver - unmanaged blockage of a road - exceptional weather conditions 	The trans-European network for roads and other motorways not included in that network	31 December 2026
Types of multimodal static travel data (as referred to in Commission		

⁷ Commission Delegated Regulation (EU) No 885/2013 of 15 May 2013 supplementing ITS Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of information services for safe and secure parking places for trucks and commercial vehicles (OJ L 247, 18.9.2013, p. 1).

⁸ Commission Delegated Regulation (EU) No 886/2013 of 15 May 2013 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to data and procedures for the provision, where possible, of road safety-related minimum universal traffic information free of charge to users (OJ L 247, 18.9.2013, p. 6).

Delegated Regulation (EU) 2017/1926⁹):		
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)	The entire transport network of the EU	31 December 2026

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⁹ Commission Delegated Regulation (EU) 2017/1926 of 31 May 2017 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide multimodal travel information services (OJ L 272, 21.10.2017, p. 1).

ANNEX IV

List of ITS services

Service	Geographical coverage	Date
Road safety-related minimum universal traffic information (SRTI) service (as referred to in Commission Delegated Regulation (EU) No 886/2013)	The trans-European network for roads and other motorways not included in that network	31 December 2026

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