

## ANNEX I

### **PRIORITY AREAS AND ACTIONS**

(as referred to in Articles 2 and 3)

#### **—Priority area I: Optimal use of road, traffic and travel data**

The specifications and standards for an optimal use of road, traffic and travel data shall include the following:

1. Specifications for priority action (a)

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

- the availability and accessibility of existing and accurate road and real-time traffic data used for multimodal travel information to ITS service providers without prejudice to safety and transport management constraints,
- the facilitation of the electronic data exchange between the relevant public authorities and stakeholders and the relevant ITS service providers, across borders,
- the timely updating of available road and traffic data used for multimodal travel information by the relevant public authorities and stakeholders,
- the timely updating of multimodal travel information by the ITS service providers.

2. Specifications for priority action (b)

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

- the availability and accessibility of existing and accurate road and real-time traffic data used for real-time traffic information to ITS service providers without prejudice to safety and transport management constraints,
- the facilitation of the electronic data exchange between the relevant public authorities and stakeholders and the relevant ITS service providers, across borders,
- the timely updating of available road and traffic data used for real-time traffic information by the relevant public authorities and stakeholders,
- the timely updating of real-time traffic information by the ITS service providers.

3. Specifications for priority actions (a) and (b)

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:

- 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,
- the facilitation of the electronic data exchange between the relevant public authorities and the ITS service providers,
- 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),
- the timely updating, by the ITS service providers, of the ITS services and applications using these road and traffic data.

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- 3.2. The definition of the necessary requirements to make road, traffic and transport services data used for digital maps accurate and available, where possible, to digital map producers and service providers, based on:
- the availability of existing road and traffic data used for digital maps to digital map producers and service providers,
  - the facilitation of the electronic data exchange between the relevant public authorities and stakeholders and the private digital map producers and service providers,
  - the timely updating of road and traffic data for digital maps by the relevant public authorities and stakeholders,
  - the timely updating of the digital maps by the digital map producers and service providers.

4. Specifications for priority action (c)

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:

- 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,
- The compatibility and the integration of ‘universal traffic messages’ into ITS services for real-time traffic and multimodal travel information.

— **Priority area II: Continuity of traffic and freight management ITS services**

The specifications and standards for the continuity and interoperability of traffic and freight management services, in particular on the TEN-T network, shall include the following:

1. Specifications for other actions

1.1. The definition of the necessary measures to develop an EU ITS Framework Architecture, addressing specifically ITS-related interoperability, continuity of services and multi-modality aspects, including for example multimodal interoperable ticketing, 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.

1.2. The definition of the minimum necessary requirements for the continuity of ITS services, in particular for cross-border services, for the management of passenger transport across different modes of transport, based on:

- the facilitation of the electronic exchange for traffic data and information across borders, and where appropriate, regions, or between urban and inter-urban areas between the relevant traffic information/control centres and different stakeholders,
- the use of standardised information flows or traffic interfaces between the relevant traffic information/control centres and different stakeholders.

1.3. The definition of the minimum necessary requirements for the continuity of ITS services for the management of freight along transport corridors and across different modes of transport, based on:

- the facilitation of the electronic exchange for traffic data and information across borders, and where appropriate, regions, or between urban and inter-urban areas between the relevant traffic information/control centres and different stakeholders,
- the use of standardised information flows or traffic interfaces between the relevant traffic information/control centres and different stakeholders.

- 1.4. The definition of the necessary measures in the realisation of ITS applications (notably the tracking and tracing of freight along its journey and across modes of transport) for freight transport logistics (eFreight), based on:
- the availability of relevant ITS technologies to and their use by ITS application developers,
  - the integration of positioning results in the traffic management tools and centres.
- 1.5. The definition of the necessary interfaces to ensure interoperability and compatibility between the urban ITS architecture and the European ITS architecture based on:
- the availability of public transport, travel planning, transport demand, traffic data and parking data to urban control centres and service providers,
  - the facilitation of the electronic data exchange between the different urban control centres and service providers for public or private transport and through all possible modes of transport,
  - the integration of all relevant data and information in a single architecture.

— **Priority area III: ITS road safety and security applications**

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

1. Specifications for priority action (d)

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

  - the availability of the required in-vehicle ITS data to be exchanged,
  - the availability of the necessary equipment in the emergency call response centres receiving the data emitted from the vehicles,
  - the facilitation of the electronic data exchange between the vehicles and the emergency call response centres.
2. Specifications for priority action (e)

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

  - the availability of the road parking information to users,
  - the facilitation of the electronic data exchange between road parking sites, centres and vehicles.
3. Specifications for priority action (f)

The definition of the necessary measures to provide ITS based reservation services for safe and secure parking places for trucks and commercial vehicles based on:

  - the availability of the road parking information to users,
  - the facilitation of the electronic data exchange between road parking sites, centres and vehicles,
  - the integration of relevant ITS technologies in both vehicles and road parking facilities to update the information on available parking space for reservation purposes.
4. Specifications for other actions

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- 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.
- 4.2. The definition of the necessary measures to improve the safety and comfort of vulnerable road users for all relevant ITS applications.
- 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 Directives 2007/46/EC, 2002/24/EC and 2003/37/EC.

— **Priority area IV: Linking the vehicle with the transport infrastructure**

The specifications and standards for linking vehicles with the transport infrastructure shall include the following:

1. Specifications for other actions
  - 1.1. The definition of necessary measures to integrate different ITS applications on an open in-vehicle platform, based on:
    - the identification of functional requirements of existing or planned ITS applications,
    - the definition of an open-system architecture which defines the functionalities and interfaces necessary for the interoperability/interconnection with infrastructure systems and facilities,
    - the integration of future new or upgraded ITS applications in a ‘plug and play’ manner into an open in-vehicle platform,
    - the use of a standardisation process for the adoption of the architecture, and the open in-vehicle specifications.
  - 1.2. The definition of necessary measures to further progress the development and implementation of cooperative (vehicle-vehicle, vehicle-infrastructure, infrastructure-infrastructure) systems, based on:
    - the facilitation of the exchange of data or information between vehicles, infrastructures and between vehicle and infrastructure,
    - the availability of the relevant data or information to be exchanged to the respective vehicle or road infrastructure parties,
    - the use of a standardised message format for the exchange of data or information between the vehicle and the infrastructure,
    - the definition of a communication infrastructure for data or information exchange between vehicles, infrastructures and between vehicle and infrastructure,
    - the use of standardisation processes to adopt the respective architectures.

## ANNEX II

## PRINCIPLES FOR SPECIFICATIONS AND DEPLOYMENT OF ITS

(as referred to in Articles 5, 6 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 of 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;
- (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;
- (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 – use of satellite-based infrastructures, or any technology providing equivalent levels of precision for the purposes of ITS applications and services that require global, continuous, accurate and guaranteed timing and positioning services;
- (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.