3.1.1. *Intelligent Transport Services for road (ITS)*

General objectives

Intelligent Transport Systems (ITS) for roads of the trans-European transport network as "intelligent" interface between roads and other transport infrastructure vitally contribute to enhancing road safety and reducing carbon emissions of the transport system by boosting the efficiency of infrastructure use and traffic operations for both passengers and freight. They also open up new perspectives for user services. TEN-T infrastructure shall be equipped with the relevant components in compliance with the Union transport policy in the field of intelligent transport systems, notably the Directive 2010/40/EU of the European Parliament and of the Council[1] to support the deployment of systems which are interoperable and provide for continuity of services across Member States and operators.

These measures contribute to a sustainable transport system (in terms of economic, environmental and social impacts) and connected mobility.

In the framework of the development and deployment of intelligent and increasingly automated transport systems, actions contributing to the deployment of Cooperative ITS (C-ITS), according to Union Regulations and standards and in line with the recommendations/outputs of the "C-ITS platform"[2], shall be promoted for all Member States.

C-ITS improve existing ITS services and create new ones, paving the road for automated vehicles, with high potential for all road users and operators while offering significant socio-economic benefits. Research projects on C-ITS have delivered promising results which have been consolidated by pilots and are increasingly considered mature for deployment.

When relevant for the development and/or deployment of ITS and C-ITS services and with a view to ensure reliable positioning services, actions to ensure compatibility of information and value added ITS services with the systems established under the Galileo and EGNOS programmes (set out in Regulation (EU) 1285/2013 of the European Parliament and of the Council[3]) may also be addressed.

Also actions must comply with legislation, in particular to the ITS Directive 2010/40/EU and its Delegated Regulations.

Sub-priority "Cooperative ITS (C-ITS) services and automation"

Actions shall support rapid deployment of C-ITS and automation across the TEN-T network and urban nodes; thereby overcoming possible barriers (whether technical, financial, legal or organisational), achieving relevant maturity and creating the necessary critical mass for scalable roll out.

Actions that include higher levels of road transport automation shall demonstrate the integration of C-ITS with automation in relevant sections of the network overcoming fragmented approaches at national levels.

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[1] Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport (OJ L 207, 6.8.2010, p. 1).

[2] http://ec.europa.eu/transport/themes/its/news/c-its-deployment-platform_en.htm

[3] Regulation (EU) No 1285/2013 of the European Parliament and of the Council of 11 December 2013 on the implementation and exploitation of European satellite navigation systems and repealing Council Regulation (EC) No 876/2002 and Regulation (EC) No 683/2008 of the European Parliament and of the Council (OJ L 347, 20.12.2013, p. 1).

Submitted proposals are expected to clearly demonstrate their Union-added value, and provide:

- A precise description of the proposed service(s) and application(s), including associated implemented technologies, equipment, software and facilities in the area of C-ITS and automation;

- A clear description of the project management planned for the effective delivery of the proposed Action, including internal cooperation and external interactions. Cost breakdowns aligned with level of efforts (i.e. by sub-activities and partners) shall be provided and risk management measures shall be anticipated;

- A precise description of (direct and indirect) partners' roles and responsibilities.

Proposed Actions are expected to:

- Demonstrate the long term viability and scalability of C-ITS (in terms of technology, financial sustainability, governance) also in conjunction with legacy systems.

- Prepare the convergence of cooperative and automated driving, by for instance:

  o Equipping sections of the core and comprehensive networks with the necessary physical as well as digital infrastructure, including the availability of the minimum relevant datasets essential for automation

  o Demonstrating hybrid communication (use of both Wi-Fi and cellular based communications) for both C-ITS and automation

  o Demonstrating the integration of C-ITS and automation in relevant sections of the network to overcome fragmented approaches

Furthermore, proposed Actions must:

- Deploy works in the Core Network, including along Core Network corridors and urban nodes.

- Demonstrate the application of C-ITS for traffic information, traffic management, energy efficiency, road safety. Priority shall be given to proposals addressing the "Day-1" and "Day 1'5" C-ITS services[4] recommended by the "C-ITS platform". Approaches on higher levels of automation can also be addressed.

- Demonstrate commitment and buy-in from all concerned stakeholders (at political and operational levels), including concerned road operators, that will contribute to the successful delivery of the Actions.

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[4]   "Day-1" C-ITS services recommended by the "C-ITS platform":
Hazardous location notifications: Slow or stationary vehicle(s) & Traffic ahead warning, Road works warning, Weather conditions, Emergency brake light, Emergency vehicle approaching, Other hazardous notifications
Signage applications: In-vehicle signage, In-vehicle speed limits, Signal violation / Intersection Safety, Traffic signal priority request by designated vehicles, Green Light Optimal Speed Advisory (GLOSA), Probe vehicle data: CAM Aggregation, Shockwave Damping (falls under ETSI Category "local hazard warning")

"Day-1.5" C-ITS services recommended by the "C-ITS platform":
Information on fuelling & charging stations for alternative fuel vehicles, Vulnerable Road user protection, On street parking management & information, Off street parking information, Park & Ride information, Connected & Cooperative navigation into and out of the city (1st and last mile, parking, route advice, coordinated traffic lights), Traffic information & Smart routing

- Address an evaluation activity, i.e.: assessment of the achieved results. Indicators shall be used to monitor and demonstrate progress, and to evaluate impacts and performance. These indicators shall be comparable at European level[5]. Also assessment methodologies shall be aligned with other ongoing initiatives in the Union.

- Cooperate with and build upon the C-Roads platform, and provide feedback on the results of the proposed Actions (including best practices, recommendations on policy making) to the "C-ITS platform" and the "EU ITS Committee".

- Be based on hybrid communication (use of both Wi-Fi and cellular based communications).

- Be submitted by one or more Member States, preferably along a continuous trajectory and/or within several inter-related cross-border priority zones/regions. Priority shall be given to proposals engaging multiple Member States and/or covering corridors and geographical areas that close the gaps between existing C-ITS pilots and activities.

- Comply with legislation, in particular to the ITS Directive 2010/40/EU and its Delegated Regulations.

- Comply with applicable standards. Proposals addressing areas where common standards or specifications are not yet defined, they shall make provision for timely compliance with such standards or specifications as and when they become available and/or contribute to the development of such standards or specifications.

Specific objectives

The multi-annual programme addresses the following areas:

- C-ITS, especially on vehicle-infrastructure communication
- Interoperability and continuity in the area of C-ITS and automation
- Enhance road safety, security and energy efficiency in the area of C-ITS and automation
- Applications for traffic information and traffic management in the area of C-ITS and automation
- Develop a digital road infrastructure to facilitate higher levels of automation
- Convergence of C-ITS and increasing levels of automation, based on a hybrid communication approach enabling the use of both Wi-Fi and cellular based communications.

Sub-priority "intelligent transport services for road (ITS)"

Actions to be supported under this priority shall consist of implementation of works for the deployment of ITS for road.

The proposed Actions shall aim at:

- Improving the interoperability, continuity and seamless mobility in the Union, with a particular attention to cross border sections, urban nodes and urban-interurban interfaces.

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[5] i.e. in line with Commission's common indicators stemming from the study "Key Performance Indicators (KPIs) for road transport Intelligent Transport Systems (ITS)"

- Improving the harmonisation of ITS services across Europe from an end user perspective.

- Improving the operational excellence and cost-efficiency from a road operator/traffic manager perspective.

Submitted proposals are expected to clearly demonstrate their Union-added value, and in particular provide all the following:

- A precise description of the ITS service(s) and application(s), including associated equipment or facilities, proposed for interoperable and/or scalable roll out across Europe.

- A geo-localised description of the baseline situation (i.e. situation prior to deployment of the proposed Action). The proposals shall provide the consolidated outcomes of any ex-ante study, cost-benefit analysis and state of the art already carried out when available.

- A precise description (geo-localised and when possible quantified) of the problem(s) to be addressed by the proposed Actions (e.g. bottlenecks, gaps, poor quality of services).

- Explicit targets (quantitative and/or qualitative), in terms of contribution to Union policies (i.e. ITS Directive) and level of services for ends users (i.e. quality and harmonisation of services).

- A clear description of the project management planned for the effective delivery of the proposed Action, including internal cooperation and external interactions. Cost breakdowns aligned with level of efforts (i.e. by sub-activities and partners) shall be provided and risk management measures shall be anticipated.

Proposed Actions must:

- Deploy works along the Core Network including on the Core Network corridors and/or urban nodes. Other geographical sections linked to the Core Network shall be specified in the call text.

- Address an evaluation activity, i.e.: assessment of the achieved results. Indicators shall be used to monitor and demonstrate progress, and to evaluate impacts and performance. These indicators shall be comparable at European level[6]. Also assessment methodologies shall be aligned with other ongoing initiatives in the Union.

- Report to the "EU ITS Committee" and/or another relevant coordination group/platform. In particular, proposed Actions have the responsibility to effectively contribute to pan-European harmonisation and interoperability of services, as well as to contribute to the monitoring and evaluation of impacts supporting the consolidation of results of ITS deployment at European level.

- Be submitted by applicants from one or more Member States, preferably along a continuous axis and/or within several inter-related cross-border priority zones/regions.

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[6]   i.e. in line with Commission's common indicators stemming from the study "Key Performance Indicators (KPIs) for road transport Intelligent Transport Systems (ITS)" & the guidance of the EU ITS Platform

Priority shall be given to proposals engaging multiple Member States and/or covering corridors/geographical areas not covered yet by the "ITS corridors"[7].

- Comply with legislations, in particular the ITS Directive 2010/40/EU and its delegated Regulations.

- Comply with applicable standards. Proposals addressing areas where common Union standards or specifications are not yet defined, they shall make provision for timely compliance with such standards or specifications as and when they become available and/or contribute to the development of such standards or specifications.

Specific objectives

The multi-annual programme addresses the following areas:

- Europe-wide traffic and travel information services, including inter alia cross border services for seamless door-to-door mobility

- Europe-wide traffic management systems to optimise traffic operations and enhance energy efficiency

- Systems to enhance road safety and security

- Expansion of "ITS corridors", or new ITS corridors coordinated with the existing ITS corridors, to cover the Core Network Corridors or the core network

- infrastructure communication.

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[7] The details of "ITS Corridors" (2014-EU-TM-0310-W, 2014-EU-TM-0365-W, 2014-EU-TM-0563-W, 2014-EU-TM-0588-W and 2014-EU-TM-0597-W) are available at: https://ec.europa.eu/inea/en/connecting-europe-facility/cef-transport/projects-by-transport-mode/its-for-road