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**STANDARDISATION MANDATE ADDRESSED TO CEN, CENELEC AND ETSI  
IN THE FIELD OF INFORMATION AND COMMUNICATION TECHNOLOGIES TO SUPPORT  
THE INTEROPERABILITY OF CO-OPERATIVE SYSTEMS FOR INTELLIGENT TRANSPORT  
IN THE EUROPEAN COMMUNITY**

**1. OBJECTIVE**

The European Standardisation Organisations, ETSI, CEN, CENELEC, are invited to prepare a coherent set of standards, specifications and guidelines to support European Community wide implementation and deployment of Co-operative ITS systems.

**2. RATIONALE**

**2.1. Introduction**

“Intelligent Transport Systems” (ITS) means applying Information and Communication Technologies (ICT) to the transport sector. ITS can create clear benefits in terms of transport efficiency, sustainability, safety and security, whilst contributing to the EU Internal Market and competitiveness objectives. To take full advantage of the benefits that ICT based systems and applications can bring to the transport sector it is necessary to ensure interoperability among the different systems throughout Europe at least.

Co-operative systems are ITS systems based on vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I, I2V) and infrastructure-to-infrastructure (I2I) communications for the exchange of information. Co-operative systems have the potential to further increase the benefits of ITS services and applications.

This Mandate supports the development of technical standards and specifications for Intelligent Transport Systems (ITS) within the European Standards Organisations in order to ensure the deployment and interoperability of Co-operative systems, in particular those operating in the 5 GHz frequency band, within the European Community. Standardisation

is a priority area for the European Commission in the ITS Action Plan in order to achieve European and global ITS co-operation and coordination.

Standardisation for Co-operative ITS systems has already been initiated both by ETSI and ISO as well as within other international standards organisations. European standardisation activities to provide standardised solutions for Co-operative ITS services are therefore closely related to the world wide standardisation activities

## **2.2. The economic environment**

During the meeting with Ministers on the Situation in the Automotive Sector held in Brussels on 16 January 2009, ministers stressed the importance of clearly focusing on innovation ensuring high-tech solutions delivering in particular fuel efficiency and CO2 reduction in the automotive sector. All efforts should target the production of world-class vehicles in terms of innovation, environmental performance and safety.

Co-operative ITS services can provide a significant impact on increasing the safety of transport. Furthermore, they can also increase the efficiency of the transport sector (including energy-efficiency) and reduce traffic congestion. In summary, they lead to a safer, more sustainable and cleaner mobility. Countries and regions with reduced congestion levels are very attractive for investment. Therefore the deployment of Co-operative systems-based ITS services will increase the general business attractiveness of Europe.

By the deployment of ITS in new cars, European consumers will benefit from higher safety, less energy consumption and more reliable traffic information. On the other hand the European transport sector, and in particular, the European automotive industry, will throw light on which path it has to follow in order to enhance the capabilities of its products, thus increasing its global competitive position.

## **2.3. The state of the technology**

The research work on the Co-operative Systems was started in Europe under the 5<sup>th</sup> and 6<sup>th</sup> Framework Programmes. The automotive industry has established the Car2Car consortia, promoting a common industry-wide approach. The Intelligent Car Initiative has supported its deployment and introduction. The key prerequisites and major Commission objectives are the development of harmonised and interoperable system architecture, a common Communications Architecture serving both public sector and private sector needs, and the availability of adequate spectrum. To this purpose, the FP6 funded support action COMeSafety established a Communications Architecture Task Force, which has produced an overall framework and a proof of concept implementation for the European ITS Communication Architecture<sup>1</sup>.

At this stage the development of intelligent Co-operative Systems, based on Vehicle to Vehicle Communication (V2V), Infrastructure to Vehicle (I2V) and Infrastructure to Infrastructure (I2I) communications, is seen as the best way to proceed in terms of achieving improvements both in the efficiency of the transport systems and in the safety of all road users.

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<sup>1</sup> See <http://www.comesafety.org/>

Intelligent Co-operative Systems increase the ‘time-horizon’ for drivers who are provided with reliable information about their driving environment, the other vehicles and all other road users, enabling improved driving conditions leading to better safety and more efficient, comfortable and cleaner mobility. Such systems also offer increased information about the vehicles, their location and the road conditions throughout the whole road network to the road operators and infrastructure owners. This allows for optimised and safer use of the capacity of the available road network and contributes to a cleaner mobility and better response to incidents and hazards. ITS also have the potential to provide better infomobility services that could contribute to a more efficient linking of the different transport modes, thus increasing the overall efficiency of the transport systems.

However for Co-operative Systems for Intelligent Transport to fully achieve their high potential it is necessary to obtain a sufficient critical market mass. To achieve the minimum penetration necessary for the systems and services to make a significant impact, it is essential to ensure their interoperability. Therefore common specifications and standards are needed. With this mandate, the public authorities call on all interested stakeholders to agree on one common solution which would ensure geographical continuity of ITS services. The aim of developing this solution is to remove fear, uncertainty and doubt from the diverse infrastructure operators when deciding if Co-operative systems should be deployed in their domain and which characteristics these systems should comply with. This will help to reach the required critical mass to produce a snowball effect.

#### **2.4. The policy environment**

In June 2005, the Commission adopted a **Communication on i2010** - ‘A European Information Society for growth and employment’<sup>2</sup>, which is a key component of the renewed Lisbon strategy, aiming at harnessing the benefits of digital economy to deliver growth and jobs. Information and Communication Technologies (ICT) are powerful drivers for community-wide productivity, growth and jobs.

The **Intelligent car**<sup>3</sup> is one of three flagship initiatives of i2010 policy, recognising the economic importance of the automotive and transport industry in economy and society and how dependent this industry is on innovations in ICT. It aims at promoting the deployment of ICT based services supporting appropriate research and complementing with and awareness measures policy measures that will contribute to making road transport safer, smarter and cleaner.

CARS 21 members agree that a holistic, integrated approach involving vehicle technology, infrastructure and the road user is the best means for increasing road safety. Furthermore, the CARS 21 mid-term report states that stakeholders consider active safety systems and intelligent transport systems as being of central importance to improving road safety in the future, together with improvements to vehicles’ compatibility.

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<sup>2</sup> COM(2005)229

<sup>3</sup> COM(2006)59 on the Intelligent Car Initiative, ‘Raising Awareness of ICT for Smarter, Safer and Cleaner Vehicles

Furthermore, the European Parliament resolution of 19 June 2008 on the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Towards Europe-wide Safer, Cleaner and Efficient Mobility: The First Intelligent Car Report (2007/2259(INI)) welcomed the commitment by the Commission to launch, from 2008 onwards, a programme to prepare transport infrastructure for the integration of Co-operative systems.

The ITS Action Plan<sup>4</sup> aims to accelerate and coordinate the deployment of Intelligent Transport Systems (ITS) in road transport, including interfaces with other transport modes, outlining six priority areas for which a set of actions are defined. In particular, the action 4.4 of the ITS Action Plan calls for the definition of a mandate for the European Standardisation Organisations to develop standards for ITS implementation regarding Co-operative systems.

## **2.5. The legal environment**

In support of the policy goals for achieving improved safety on the roads by Intelligent Transport Systems, the European Commission adopted an EC Decision ‘on the harmonised use of radio spectrum in the 5 875-5 905 MHz frequency band for safety-related applications of Intelligent Transport Systems (ITS)’<sup>5</sup>. The purpose of this Decision was to harmonise the conditions for the availability and efficient use of the frequency band 5875-5905 MHz for safety related applications of Intelligent Transport Systems (ITS) in the Community.

European standards for Co-operative ITS services are needed to fulfil the requirements behind the legally binding implementation measure of the spectrum Decision for ITS in Europe, and in order to ensure true Community wide interoperability essential parts of the standards would need legal enforcement measures.

## **2.6. The standardisation environment**

European Research and Development projects on ITS Co-operative systems have developed the technical and scientific background for European standardisation within the 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> Framework Programmes of the European Commission. These research results are now being transferred to the ETSI and CEN standardisation process with the aim of promoting Community wide technical standards and specifications.

European-wide and world-wide standardisation requires a harmonised approach to ITS application requirements, system architecture, networks and transport protocols, media related and security issues for the implementation and deployment of Co-operative ITS services within the European Community.

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<sup>4</sup> Commission Communication of 16 December 2008 [COM(2008)886]: Action Plan for the Deployment of Intelligent Transport Systems in Europe

<sup>5</sup> Commission Decision of 5 August 2008 (2008/671/EC)

A continued cooperation between the standardisation organisations including conformance and interoperability tests and the research and development projects would be a pre-requisite for the successful standardisation of Co-operative ITS services.

At European level, the members of the ICT Standards Board (ICTSB) have established an ITS Standardisation Steering Group (ITS-SG) with the objective of co-ordinating among the various ITS specification activities in order to facilitate the preparation of a well-structured and consistent set of standards. A number of standards organizations, fora and consortia are also involved in specification work for ITS.

The relevant committees working in the field are:

- At ETSI: Technical Committee on ITS has been recently established
- At CEN: Technical Committee 278 "Road Transport and Traffic Telematics" (RTTT).

### **3. DESCRIPTION OF THE MANDATED WORK**

CEN, CENELEC and ETSI are requested to:

1. Carry out an analysis of the required European standardisation activity based on the existing roadmaps of the standardisation process for Co-operative ITS services within the European Standardisation organisations. The analysis should:
  - 1.1. Include a detailed work programme covering the necessary standardisation work in support of Co-operative ITS services. This standardisation work covers exclusively road-bound traffic. All other ground level traffic, such as water navigation and rail traffic, are not covered. The ESOs should identify the potentialities for information interchange between transport modes not included in this mandate and those included. However it is not excluded that the outcome of research and standardisation activities would lead to extension of the standardisation work to other transport modalities in the future.
  - 1.2. Identify which are the potential functionalities that the new systems can supply to drivers, infrastructure providers, emergency services, public administrations and any other identifiable stakeholders. The ESOs should identify the risks for the privacy of the users of these functionalities and the measures to be taken to eliminate these risks. The work programme should detail the expected economic impact of these new functionalities and their requirements in terms of exchange of information and communications.
  - 1.3. Identify the minimum set of European standards required in the field of Co-operative systems to ensure interoperability for vehicle to vehicle communications, for vehicle to infrastructure communications and for communications between infrastructure operators. This set of standards should be divided into communication, information and security standards and should take into account existing work, such as DATEX (CEN TC 278 WG8).
2. Develop the identified minimum set of European standards (ENs) contained in the work programme within the stated time schedule.

3. Develop test methods for assessing the conformity of the identified minimum set of standards.
4. Develop the rest of the identified standards and technical specifications for Co-operative ITS.

#### **4. EXECUTION OF THE MANDATE**

##### **4.1. Modus operandi and co-ordination aspects**

The European Standards Organisations, ETSI, CEN and CENELEC will establish adequate and efficient co-operation mechanisms in view of achieving the widest possible consensus amongst all parties concerned. In addition, the ongoing arrangements and coordination with other regional standards organisations as well as co-operation with relevant European industry fora and consortia should be continued and further developed. The work programme should be discussed at open meetings and workshops and the Commission may consult with Member States on the proposed work programme.

The work programme should also take into account the world wide coordination of standardisation activity for the Co-operative ITS services and include European standardisation activities in support of the world wide standardisation achievements.

The following main coordination activities should be carried out:

- The Commission should be closely associated in the co-ordination of the activities by the ESOs.
- The ITS-SG should be invited to monitor the execution of the standardisation work requester by this mandate with the view to implementing a coherent and commonly agreed standardisation strategy’;
- Co-operation with relevant industry fora and consortia should be ensured;
- International co-operation should be ensured with relevant standards originations;
- Results of relevant EU Research projects should be considered in the standardisation work.

##### **4.2. Arrangements for the execution of the mandate**

Within three months of the date of acceptance of this Mandate ETSI, CEN and CENELEC must present a report to the Commission with the work programme to achieve goal of completion of the standardisation process for Co-operative ITS services. Particular attention must be given to the involvement of all relevant parties, including public authorities, and to the working arrangements between relevant industry fora and consortia.

Within one year of the date of acceptance of this Mandate ETSI, CEN and CENELEC must present a progress report on the achievements in accordance with the work programme. CEN, CENELEC and ETSI must present annual progress reports to the Commission services.

Twenty months after the acceptance of this mandate, a comprehensive report must be presented with the status of the on-going work and the latest available draft of the different standards.

With the finalisation of the work programme, at most thirty months after its acceptance, a comprehensive report must be presented with the results of the mandate and the European wide and international coordination of the standardisation activities.

ETSI, CEN and CENELEC are invited to put adequate monitoring mechanisms for the execution of the work in place as soon as possible.

Acceptance by CEN, CENELEC and ETSI, as applicable, of this mandate starts on the standstill period referred to in Article 7 of the Directive 98/34/EC of 22 June 1998 (Of N° L 204/37 of 21 July 1998).

## **5. BODIES TO BE ASSOCIATED**

As appropriate, CEN, CENELEC and ETSI will invite the representatives from stakeholders interested in the domain, such as:

- Organisations of consumers' interests (ANEC)
- Organisations of environmental protection (ECOS)
- Organisations of workers (ETUI-REHS)
- Organisations of small and medium-size enterprises (NORMAPME)
- Industrial and multi-stakeholders organisations active in the domain (Car2Car, TISA, eSafety forum, ERTICO) to take part in the standardisation work.
- Toll providers organisations
- Road infrastructure operators and authorities.

Previous work performed in the domain should be taken into consideration, such as the findings from projects such as CVIS, SAFESPOT and, COOPERS.

The ESOs are invited to link with any other relevant international activities in the field in order to re-use work and avoid overlapping.