Intelligent transport systems — Cooperative systems — State of the art of Local Dynamic Maps concepts

Systèmes intelligents de transport — Systèmes coopératifs — État des connaissances des cartes dynamiques locales
Foreword

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO’s adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 204, Intelligent transport systems.
Introduction

Intelligent transport systems (ITS) means to apply information and communication technologies (ICT) to the transport sector. ITS can create clear benefits in terms of transport efficiency, sustainability, safety and security.

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.

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

Cooperative ITS is a subset of the overall ITS that communicates and shares information between ITS stations to give advice or facilitate actions with the objective of improving safety, sustainability, efficiency and comfort beyond the scope of stand-alone systems.

The European Commission issued Mandate M/453 [6] [7] to invite the European Standardization Organizations (ESOs) (CEN, CENELEC and ETSI) to prepare a coherent set of standards, specifications and guidelines to support the European Community’s wide implementation and deployment of Cooperative intelligent transport systems (Cooperative ITS).

CEN and ETSI have formally accepted the Mandate and will develop standards (EN) and technical specifications and guidelines requested as far as possible within the timescale required in the Mandate. (see Reference [7])


ISO/TC 204 decided in 2009 to join CEN’s efforts and to create a new working group (WG 18) under the Vienna agreement. This Technical Report is considered by non-European NSOs as important enough to justify having it under ISO lead.

Different ITS stations (vehicle, nomadic, roadside and central) exchange geographically located information, which is of importance for the different cooperative applications (standards to be developed under the responsibility of CEN and ISO).

This Technical Report delivers information about the status at the time of publication of the Local Dynamic Map (LDM) concepts as they have been developed in the different R&D projects in Europe, Japan and the USA.

It presents different architectures, implementations, LDM functional blocks and the related standardization activities. It can identify gaps, lacks and inconsistencies between Cooperative ITS Reference Station Architecture and existing implementations. It proposes actions for future standardization activities and harmonization needs. Activities within ISO/TC 204 WG 3 and ETSI TC ITS at the time of publication are considered.

This Technical Report falls within the agreed scope of work of ISO/TC 204 WG18 and CEN TC 278 WG16.