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Intelligent transport systems — Co-operative ITS — Local dynamic map

*Systèmes de transport intelligents — Systèmes intelligents de
transport coopératifs — État des connaissances des cartes*



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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by ISO/TC 204, *Intelligent transport systems*.

This first edition cancels and replaces the first edition (ISO/TS 18750:2015), which has been technically revised.

Introduction

An essential property of cooperative intelligent transport systems (C-ITS), see ISO TR 17465-1[17], is the sharing of data between different ITS applications providing different ITS services to the users. This approach replaces the traditional approach where each application is operated in an isolated environment, i.e. referred to as "silo - approach". The C-ITS approach enables synergies in components of an ITS station unit, e.g. sharing of communication tools, improves overall performance and reliability, and reduces overall cost. In order to protect the interests of the various ITS applications, C-ITS implements the concept of an ITS station operated as a bounded secured managed domain.

The sharing of data between applications is achieved by subscribe/publish mechanisms, where at least two mechanisms are distinguished, i.e. one allowing ITS-S application processes to subscribe to standardized messages from ITS message sets (direct forwarding upon reception of such messages in an ITS station unit), and one using a local dynamic map (LDM) as repository of standardized data objects. Such data objects stored in an LDM are named LDM Data Objects (LDM-DOs). LDM-DOs provide self-consistent information on real objects existing at a given geo-location during a given lifetime-interval. Authorized ITS-S application processes may add LDM-DOs to an LDM, and may retrieve LDM-DOs from an LDM. Retrieval of LDM-DOs may be performed in queries and by means of subscription. A subscription will result in automatic notifications of selected LDM Data Objects either in defined time intervals, or event driven.

This document introduces the usage of LDMs, and specifies the LDM for global usage in C-ITS.

Initial implementations of LDMs were in the EU research projects CVIS[40] and Safespot[42].