



Technical Specification

ISO/TS 22726-1

Intelligent transport systems — Dynamic data and map database specification for connected and automated driving system applications —

Part 1: Architecture and logical data model for harmonization of static map data

Systèmes de transport intelligents — Spécification de données dynamiques et de bases de données cartographiques pour les applications de système de conduite connectées et automatisées —

Partie 1: Architecture et modèle logique de données pour l'harmonisation des données cartographiques statiques

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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

This second edition cancels and replaces the first edition (ISO/TS 22726-1:2023), which has been technically revised.

The main changes are as follows:

- addition of a traffic regulation model consisting of traffic regulations, time conditions, and vehicle conditions;
- addition of traffic regulation attributes in the carriageway and lane data sets;
- addition of "carriageway manoeuvre path" and "lane manoeuvre path" classes in the carriageway and lane datasets;
- addition of the "crossfall" class as one of the physical characteristics for carriageways and lane data sets;
- integration of both major and minor road structures packages into the road structure sub-package;
- addition of an upper space feature attribute in the carriageway data set;
- addition of properties which define the features in the space under the vehicle bridge or the objects of the super- or sub-structures;
- addition of a parking lot marking class in the road marking sub-package;
- change of "island nose" to "shock absorption device" class name;
- change of "speed bump" to "traffic calming device" class name;
- change of "bus stop board" to "public transport stop point board" class name;
- change of "inaccessible sloped zone" to "inaccessible zone" class name;
- integration of both "bridge" and "viaduct" into the "vehicle bridge" class;

— additional technical and editorial revisions.

A list of all parts in the ISO 22726 series can be found on the ISO website.

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Introduction

In response to emerging automated driving system (ADS) development, a new requirement for an intelligent transport system (ITS) map database standard has been raised to define a set of models for highly confident map data.

The data used in ADS are categorized into static data (i.e. map for highly automated driving (MHAD) and traditional map data) and dynamic data (e.g. traffic and travel information). These data are mutually related and linked to support ADS. The data model for ADS should have a structure specialized for automated driving and be presented in a manner useable for ADS.

In the case of static map data used by ITS, ISO 14296 specifies a logical data model applied to vehicle navigation systems and cooperative ITS (C-ITS). The data model of ISO 14296 is insufficient for ADS because of limitations to represent detailed or accurate carriageway and road-related features. In addition, new relationships between new map features and dynamic data are defined.

Even though GDF 5.1 (ISO 20524-2) defines map data used in ADS, such as road belts or lane belts, as detailed road map data, it focuses on a data model for exchanging and provisioning map data between map makers and data centres. The GDF model, which is based on three catalogues (Feature, Attribute, and Relationship), is inefficient not only for storing ITS map data in a database, but also for being able to access that data rapidly in vehicles. Therefore, this document defines a database standard to quickly and directly access detailed road map entities and their related information.

Implementation of this document can potentially lead to cost reductions in maintenance and expansion of map access libraries, as well as reductions in compilation and maintenance costs of map and map-related data for data providers for connected and automated driving, and vehicle control applications.

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