
Navigation data delivery structures and protocols

Structures et protocoles pour la diffusion de données dans les systèmes de navigation



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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

ISO 24099 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

Introduction

This International Standard was developed in relation to growing market demand for dynamic update services for map-related data in navigation systems. Map-related data includes not only feature geometry and attributes but also point of interest (POI) data such as hotels, restaurants, and dynamic content such as traffic, weather, movie schedules, parking availability, etc. Currently, most map data updates are provided on physical media whose map data content begins aging rapidly once it is delivered to the user. In the future, it is anticipated that the transmission of these data will most often, but not exclusively, be via wireless means. The advantage of wireless data delivery is that it simplifies the distribution logistics thereby accelerating the ability of a consumer to receive fresher data. This International Standard facilitates the potential for on-demand updates of on-board map databases. Further, the updates do not necessarily require the replacement of an entire map database. Rather, the updates can be limited to a portion of a dataset or a specific list of attributes or POI changes can also be provided.

The services described above have begun to be deployed in a non-interoperable manner by various car manufacturers and information system providers. This International Standard is intended to promote the successful widespread adoption of such services through user access to an interoperable network of servers offering more content choices than is available through a single provider.

This International Standard defines the data structures and protocol needed to enable interoperability between multiple content providers and consumers of map-related data content in a wireless environment. As far as possible the data structures are compatible with the ISO geographic data file (GDF) data model. Different software profiles can be developed to support various system configurations: systems which store all data in the vehicle (on-board), systems which store all data in a central server (off-board), and systems which use both on-board and off-board data storage (hybrid).

Furthermore, this International Standard is designed to utilize the communications protocols such as those under development in TC 204/WG 16. This International Standard recognizes the possible need for security mechanisms in the provision of this data.

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning procedures, methods and/or formats given in this document.

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Navigation data delivery structures and protocols

1 Scope

This International Standard defines the data structures and protocol(s) used in intelligent transport system (ITS) applications for the delivery and update of map-related data from Service Centre (SC) to users [(In-vehicle Systems (IVS))].

This International Standard also specifies the message generation protocols in the Service Centre and the message receiving protocols in the In-vehicle Systems.

The map centre specified in this International Standard represents the supplier of map data and the Service Centre provides data and services to user devices.

The term protocol as used in this International Standard is a temporal sequence of map-related data interactions between system components that implement map-related data delivery and update. The delivery and update of map-related data rely on existing communication technology. The protocols associated with communication technology, and the other application control protocols and non-map-related data, for example images to display independent of the map database such as HTML images, are outside the scope of this International Standard.

Definitions of security mechanisms and business transaction mechanisms are also outside the scope of this International Standard.

Figure 1 below illustrates the scope of this International Standard.

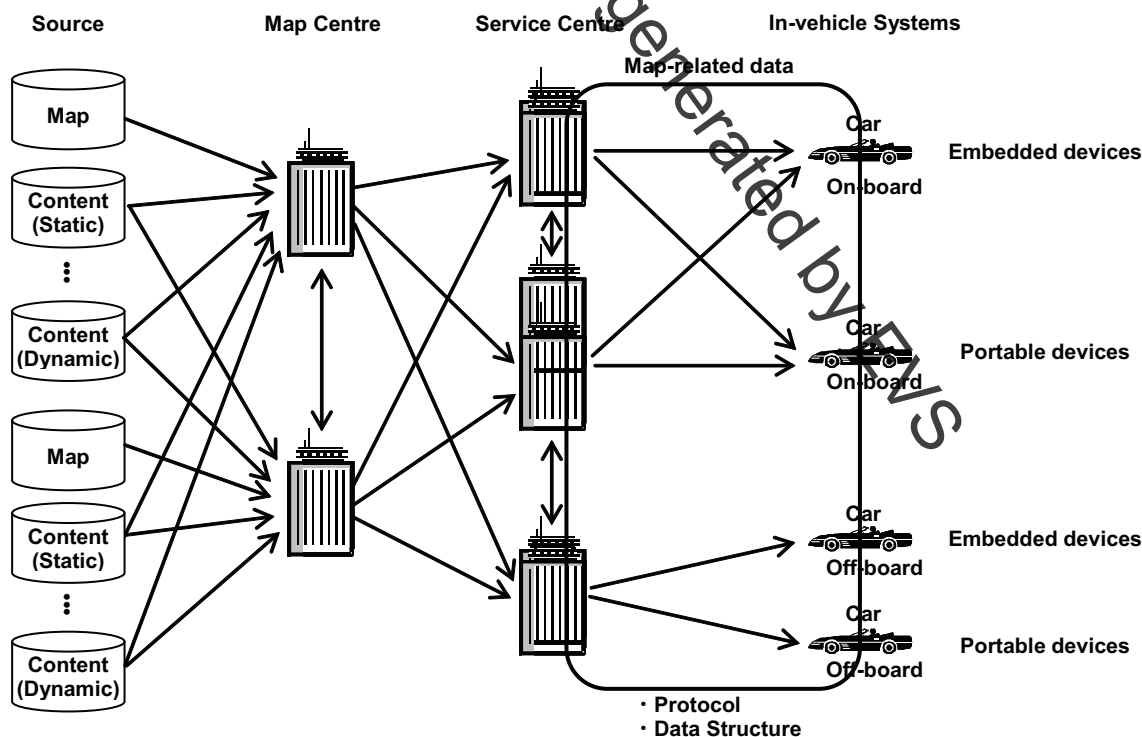


Figure 1 — Scope of this International Standard