U.S. Department of Transportation

Intelligent Transportation Systems Standards Fact Sheet

July 2001

SAE J1746 ISP-Vehicle Location Referencing Standard

Overview

The ISP-Vehicle Location Referencing Standard establishes a set of data object definitions describing the exact location of a vehicle or incident. It also standardizes the way that this information is conveyed between vehicles and information service providers (ISPs) and transportation management centers. In order for intelligent transportation systems (ITS) to operate properly, incident locations be registered to digital maps and transferred from one digital map to another. Locations of accidents, closed or slow sections of roads, or areas evacuated due to natural or man-made disasters must be defined exactly, then the information must be transferred from one system component to another. Sometimes, these locations are obtained from equipment such as global positioning systems (GPS); other times they are extracted from digital or conventional maps. In any case, locations need to be communicated accurately and without ambiguity among different digital map databases and between vehicles and ISPs, regardless of the complexity of the situation.

To obtain a copy of this standard, please contact:

Society of Automotive Engineers (SAE)
400 Commonwealth Drive
Warrendale, PA 15096
Tel: (724) 776-4841
Fax: (724) 776-0243
Web site: www.sae.org

Publication Date: December 1999

The ISP-Vehicle Location Referencing Standard is based on the Cross-Streets Profile in the Location Referencing Message Specification (LRMS) Information Report (SAE J2374). The Cross-Streets Profile uses intersecting (crossing) streets to identify locations, along with geographic coordinates of the intersection. A standard location reference according to the ISP-Vehicle Location Referencing Standard passes coordinates of the intersection of streets (supplemented by street names when available) to resolve locational ambiguities. The standard describes format in two ways: a bit-level layout and an ASN.1 format.

What is this standard for?

This standard, **SAE J1746, ISP-Vehicle Location Referencing Standard**, describes format and vocabulary for location referencing between centers, such as transportation management centers, and vehicles. A traffic management center must use this interface standard when sending or receiving locational data and vehicles must expect to send and receive references through this interface standard as well.

The ISP-Vehicle Location Referencing Standard is an interface standard. It provides meanings (semantics) for the content of location references, and formats (syntax) for the presentation of location references to application software. However, it should be noted that more than an interface standard is required for successful, unambiguous location referencing. SAE J1746 is a conduit for information flow. It specifies syntax and common language, but does not specify the quality of the locational data, or if the sender and receiver understand the data models underlying the data being sent. For example, the sender's map may have a street that is not in the receiver's database, or the receiver's map may have two or more locations that match it. Specifying the interface does not guarantee the quality of the location reference, nor does it ensure interoperability among different databases. In other words, using SAE J1746 is a necessary condition for national interoperability between centers and vehicles, but it is not sufficient in itself; it must work hand-in-hand with locational data of sufficient quality and consistency to achieve interoperability.

Who uses it?

This standard is intended for use by ITS system developers, ISP implementers, vehicle navigation system developers, and any person or organization wishing to use a standard interface for location referencing purposes.

How is it used?

This standard is used to specify location referencing methods, formats, and definitions to convey data between centers and vehicles. System developers, ISP implementers, and others may use the standard in other applications when appropriate for an application.

Scope

This standard should be used for the communication of spatial data references between central sites and mobile vehicles on roads, railways, and waterways. References can be communicated from central site to vehicles or vice-versa. The standard may also be used where appropriate by other ITS applications requiring location references between data sets.

Related documents

SAE J2374 – Location Referencing Message Specification Information Report

SAE J2369 – Standards for ATIS Message Sets Delivered Over Bandwidth Restricted Media

For more information on ITS standards, contact the Federal Highway Administration, ITS Joint Program Office, Room 3401, HOIT, 400 7th Street, SW, Washington, DC 20590, phone: 202-366-2180, fax: 202-366-3302, Web site: www.its-standards.net

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