



U.S. Department of
Transportation



Intelligent Transportation Systems Standards Fact Sheet

SAE J2355

July 2001

ITS Data Bus (IDB) Architecture Reference Model Information Report

Overview

The ITS Data Bus (IDB), a serial communication bus, may be the bridge between the development-cycle time difference of automobiles and electronics. It may also meet the need to be able to upgrade automobile electronics during the life of the vehicle. It is intended to provide a common network interface for consumer devices, which may be integrated into vehicles.

The long development time required to produce a new automobile and the short development time of today's consumer electronic devices has meant that the electronics in a vehicle might lag the state of the art by several years. With the growing consumer-oriented electronics content in today's vehicles, it is becoming more difficult for the automotive manufacturers to meet consumers' expectations. The result is increasing pressure on the vehicle manufacturers from after-market electronics suppliers, who can update their product lines as fast as the device manufacturers can produce new models.

To obtain a copy of this standard, please contact:

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What is this standard for?

This Information Report describes the reference architecture used in the development of the IDB, and the goals and functional requirements of the IDB. It was developed by the SAE ITS Data Bus Committee with the support of the Consumer Electronics Manufacturers Association (CEMA) division of the Electronics Industry Association (EIA) through a broad industry consensus process, which included two two-day workshops attended by over 100 people from the automotive industry, the automotive electronics industry, and the consumer electronics industry. The Information Report's primary goal was to define the functional requirements for the IDB, so that a state-of-the-art scan could be performed on all existing buses to determine if one of them might be easily adopted to serve as the IDB. The scan determined that there was no bus that would meet the requirements, and a new project was initiated to develop the IDB specifications described now in SAE J2366 and SAE J2367.

Who uses it?

This Information Report serves as a reference for those interested in the IDB and its origins, to help them understand the reasoning and underlying requirements that drove the development of the IDB.

How is it used?

SAE Information Reports are reports of an informational nature and are used to educate those interested in the technology.

Scope

This Information Report describes a reference model for an in-vehicle data bus for ITS, and introduces the overall concepts of the IDB.

Related documents

To accommodate the broad scope of this effort, the IDB specifications have been divided into several individual documents. At present, the following documents are defined:

SAE J2355—ITS Data Bus—Architecture Reference Model Information Report (this standard)

SAE J2366-1—ITS Data Bus—Protocol Physical Layer (Recommended Practice)

SAE J2366-2—ITS Data Bus—Protocol Link Layer (Recommended Practice)

SAE J2366-4—ITS Data Bus—Protocol Thin Transport Layer (Recommended Practice)

SAE J2366-7—ITS Data Bus—Protocol Application Message Layer (Recommended Practice)

SAE J2366-7LX—ITS Data Bus—Application Message Layer Lexicon

SAE J2366-7A—ITS Data Bus—Vehicle Application Messages (Recommended Practice)

SAE J2366-7B—ITS Data Bus—Other Application Messages

SAE J2366-7C—ITS Data Bus—Advanced Traveler Information Systems Application Messages

SAE J2366-7D—ITS Data Bus—Computation/Storage Application Messages

SAE J2366-7E—ITS Data Bus—Entertainment Application Messages

SAE J2366-7F—ITS Data Bus—Communications Application Messages

SAE J2366-7G—ITS Data Bus—User Interface Application Messages

SAE J2366-7H—ITS Data Bus—Public Service Application Messages

SAE J2366-7I—ITS Data Bus—Commerce Application Messages

SAE J2366-7J—ITS Data Bus—Navigation Application Messages

SAE J2366-7K—ITS Data Bus—Security Application Messages

SAE J2366-7L—ITS Data Bus—Emergency/Public Safety Messages

SAE J2366-7M—ITS Data Bus—Diagnostic Application Messages

SAE J2366-7N—ITS Data Bus—Warning Application Messages

SAE J2367—ITS Data Bus Gateway (Recommended Practice)

SAE J2368—ITS Data Bus Conformance Test Procedure (Recommended Practice)

SAE J1760—ITS Data Bus Data Security Services (Recommended Practice)