



SURFACE VEHICLE RECOMMENDED PRACTICE

J2534™-2/9_500

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Issued

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Pass-Thru Extended Features - Ethernet NDIS

RATIONALE

Each of the features contained in the original SAE J2534-2 document (API version 04.04) is being published as a separate document for ease of maintenance and extensibility. At the same time, these features are being updated to be compatible with SAE J2534-1_0500 (API version 05.00) and to address feedback from the field.

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https://www.sae.org/standards/content/J2534-2/9_5_00

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1. SCOPE

This SAE Recommended Practice is part of the SAE J2534-2/X_0500 set of documents that extends the SAE J2534-1_0500 API (version 05.00) specification, and defines how to implement ethernet NDIS within the SAE J2534 API framework. This document details only the changes from SAE J2534-1_0500 and items not specifically detailed in this document are assumed to have not changed.

An SAE J2534-2/9_0500 interface shall be compliant to the ethernet NDIS feature only when all the required functionality in this Recommended Practice is implemented. Any functionality not required for compliance will be specifically marked as “optional” in this document.

This document must be used in conjunction with the SAE J2534-2/BA_0500 and J2534-2/RE_0500 documents.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J2534-1_0500 Recommended Practice for Pass-Thru Vehicle Programming (API version 05.00)

SAE J2534-2/BA_0500 Pass-Thru Extended Features - Base Document (API version 05.00)

SAE J2534-2/RE_0500 Pass-Thru Extended Features - Resource Document (API version 05.00)

2.1.2 ISO Publications

Copies of these documents are available online at <http://webstore.ansi.org/>.

ISO 13400-2 Diagnostic Communication over Internet Protocol (DoIP) - Transport Protocol and Network Layer Services

ISO 13400-3:2016 Diagnostic Communication over Internet Protocol (DoIP) - Wired Vehicle Interface Based on IEEE 802.3

2.1.3 Other Documents

Microsoft Corp Network Driver Interface Specification

3. DEFINITIONS

ACTIVE MESSAGE: Refers to a message that has started the transmission process on the physical vehicle bus but has not completed it.

AUTO-MDI(X): Automatic medium-dependent interface crossover device that allows the ethernet hardware to decide whether a cross-linked cable or a one-to-one connected (patch) cable is used for the connection between two ethernet ports and which configures the physical layer transceiver (PHY) according to the type of cable in order to correctly connect Tx and Rx lines.

DOIP EDGE NODE: Host inside the vehicle, where the ethernet activation line in accordance with ISO 13400-3:2016 is terminated and where the link from the first node/host in the external network is terminated. (Refer to ISO 13400-3:2016 for more details.)

LOGICAL COMMUNICATION CHANNEL: A specific path through the pass-thru interface to the physical vehicle bus that uses an existing physical communication channel but adds the network and transport layers (as defined by OSI).

PASS-THRU DEVICE: Refers only to the hardware portion of the SAE J2534 interface.

PASS-THRU INTERFACE: Refers to all components of a SAE J2534 interface, including both physical hardware and software.

PHYSICAL COMMUNICATION CHANNEL: A specific path through the pass-thru interface to the physical vehicle bus that encompasses the physical layer and data link layer (as defined by OSI) and includes all the associated physical resources (such as the data link controller, connector, pins, etc.) in the pass-thru device.

QUEUED MESSAGE: Refers to a full message from the application that has been accepted by the pass-thru interface (via the API) for transmission, which is intended to become an active message at some point in the future.

TERMINATE A MESSAGE: Refers to the process of stopping reception or transmission of a message by the pass-thru interface.

TRANSMITTED MESSAGE: Refers to a previously active message that has been successfully transmitted on the physical vehicle bus.

4. ACRONYMS

API	Application Programming Interface
DLL	Dynamic Link Library
IP	Internet Protocol
MAC	Media Access Control
NIC	Network Interface Card
NDIS	Network Driver Interface Specification
RNDIS	Remote Network Driver Specification
WINSOCK	Windows Sockets API

5. DOCUMENTATION CONVENTIONS

In the document body and in tables:

- All SAE J2534 API functions shall be in bold print (for example, **PassThruOpen**).
- All SAE J2534 API variables shall be enclosed in "<>" (for example, <DeviceID>).
- All SAE J2534 API DEFINES shall be in upper-case print (for example, STATUS_NOERROR).
- All numbers shall be in decimal unless otherwise indicated. (Hexadecimal values have a leading "0x"; for example, 0x7AF or 0x800 are hexadecimal values.)