

the following information necessary for developing generic diagnostic scan tools:

(A) The physical hardware requirements for data communication (e.g. system voltage requirements, cable terminals/pins, connections such as RS232 or USB, wires, etc.),

(B) ECU data communication (e.g. serial data protocols, transmission speed or baud rate, bit timing requirements, etc.),

(C) Information on the application physical interface (API) or layers. (i.e., processing algorithms or software design descriptions for procedures such as connection, initialization, and termination),

(D) Vehicle application information or any other related service information such as special pins and voltages or additional vehicle connectors that require enablement and specifications for the enablement.

(iii) Any manufacturer who utilizes an automated process in its manufacturer-specific scan tool for diagnostic fault trees shall make available to equipment and tool companies the data schema, detail specifications, including category types/codes and vehicle codes, and data format/content structure of the diagnostic trouble trees.

(iv) Manufacturers can satisfy the requirement of paragraph (g)(13)(iii) of this section by making available diagnostic trouble trees on their manufacturer Web sites in full-text.

(14) *Availability of manufacturer-specific scan tools.* Manufacturers shall make available for sale to the persons specified in paragraph (g)(2)(i) of this section their own manufacturer-specific diagnostic tools at a fair and reasonable cost. These tools shall also be made available in a timely fashion either through the manufacturer Web site or through a manufacturer-designated intermediary. Manufacturers who develop different versions of one or more of their diagnostic tools that are used in whole or in part for emission-related diagnosis and repair shall insure that all emission-related diagnosis and repair information is available for sale to the aftermarket at a fair and reasonable cost. Manufacturers shall provide technical support to aftermarket service providers for the tools described in this section, either themselves or through a third party of its choice. Factors for determining fair and reasonable cost include, but are not limited to:

(i) The net cost to the manufacturer's franchised dealerships for similar tools obtained from manufacturers, less any discounts, rebates, or other incentive programs;

(ii) The cost to the manufacturer for preparing and distributing the tools, excluding any research and development costs;

(iii) The price charged by other manufacturers of similar sizes for similar tools;

(iv) The capabilities and functionality of the manufacturer tool;

(v) The means by which the tools are distributed;

(vi) Inflation.

(vii) The ability of aftermarket technicians and shops to afford the tools.

(15) *Changing content of manufacturer-specific scan tools.*

Manufacturers who opt to remove non-emissions related content from their manufacturer-specific scan tools and sell them to the persons specified in paragraph (g)(2)(i) of this section shall adjust the cost of the tool accordingly lower to reflect the decreased value of the scan tool. All emissions-related content that remains in the manufacturer-specific tool shall be identical to the information that is contained in the complete version of the manufacturer specific tool. Any manufacturer who wishes to implement this option must request approval from the Administrator prior to the introduction of the tool into commerce.

(16) *Special tools.* (i) Manufacturers who have developed special tools to extinguish the malfunction indicator light (MIL) for Model Years 1994 through 2003 shall make available the necessary information to equipment and tool companies to design a comparable generic tool. This information shall be made available to equipment and tool companies no later than September 25, 2003.

(ii) Manufacturers are prohibited from requiring special tools to extinguish the malfunction indicator light (MIL) beginning with Model Year 2004.

(17) *Reference materials.*

Manufacturers shall conform with the following Society of Automotive Engineers (SAE) standards.

(i) For Web-based delivery of service information, manufacturers shall comply with SAE Recommended Practice J1930 (Revised, May 1998), "Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms" (Incorporated by reference, *see* § 86.1). This recommended practice standardizes various terms, abbreviations, and acronyms associated with on-board diagnostics. Manufacturers shall comply with SAE J1930 beginning with Model Year 2004.

(ii) For identification and scaling information necessary to interpret and

understand data available to a generic scan tool through "mode 6," manufacturers shall comply with SAE Recommended Practice J1979 (Revised, September, 1997), "EE Diagnostic Test Modes" (Incorporated by reference, *see* § 86.1). This recommended practice describes the implementation of the diagnostic test modes for emissions-related test data. Manufacturers shall comply with SAE J1979 (Incorporated by reference, *see* § 86.1) beginning with Model Year 2004.

(iii) For allowing ECU and equipment and tool manufacturers to satisfy the needs of multiple end users with minimum modification to a basic ECU design, manufacturers shall comply with "Recommended Practice J2284-3 (May, 2001), "High Speed CAN (HSC) for Vehicle Applications at 500 Kbps" (Incorporated by reference, *see* § 86.1). SAE J2284-3 establishes standard ECU physical layer, data link layer, and media design criteria. Manufacturers may comply with SAE J2284-3 beginning with model year 2003 and shall comply with SAE J2284-3 beginning with model year 2008.

(iv) For pass-through reprogramming capabilities, manufacturers shall comply with SAE Recommended Practice J2534 (February, 2002), "Recommended Practice for Pass-Thru Vehicle Programming" (Incorporated by reference, *see* § 86.1). This recommended practice provides technical specifications and information that manufacturers must supply to equipment and tool companies to develop aftermarket pass-through reprogramming tools. Manufacturers shall comply with SAE J2534 beginning with model year 2004.

(18) *Reporting requirements.* Manufacturers shall provide to the Administrator reports on an annual basis within 30 days of the end of the calendar year and upon request of the Administrator, that describe the performance of their individual Web sites. These annual reports shall be submitted to the Administrator electronically utilizing non-proprietary software in the format as agreed to by the Administrator and the manufacturers. Manufacturers may request Administrator approval to report on parameters other than those described below if the manufacturer can demonstrate that those alternate parameters will provide sufficient and similar information for the Administrator to effectively evaluate the manufacturer Web site. These annual reports shall include, at a minimum, monthly measurements of the following parameters: