SAE International™

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J1698-2

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Vehicle Event Data Interface—
Vehicular Data Extraction

1. Scope

1.1 Purpose

This Recommended Practice is intended to define a common method for determining how to extract Event Data from a motor vehicle, including the Event Data Set needed to output the Event Record of data elements defined in SAE J1698. It is intended for use by those developing tools for the purpose of Event Data Set extraction.

1.2 Scope

This Recommended Practice aims to utilize existing industry standards to define a common physical interface and the protocols necessary for Event Data Set extraction. To accomplish this, the SAE J1962 Diagnostics Connector has been designated the primary physical interface and associated industry standard diagnostic protocols have been designated for communications.

1.2.1 LIMITATIONS

- It is intended that this Recommended Practice shall be usable for the development of Event Data extraction tools intended to interface with light duty vehicles.
- While this Recommended Practice defines common methods for the extraction of Event Data to the greatest extent practical, it is not intended to standardize the content of the Event Data Set saved by an individual light duty vehicle.
- It shall be at the discretion of each affected vehicle manufacturer to make available the information necessary to convert the Event Data Set into an Event Record consistent with J1698.
- This Recommended Practice does not take into account the multitude of factors that must be considered in order to enable a user to directly connect a tool to on-vehicle or off board data storage device(s) and extract data. Rather, it is at the discretion of each light duty vehicle manufacturer to provide the information necessary to extract data via a direct connection to specific data storage device(s).

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2. References

2.1 Applicable Publications

2.1.1 SAE PUBLICATIONS

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J1698—Vehicle Event Data Interface – Vehicular Output Data Definition
SAE J1962—Diagnostic Connector Equivalent to ISO/DIS 15031-3
SAE J1978—OBD II Scan Tool -- Equivalent to ISO/DIS 15031-4
SAE J1979—E/E Diagnostic Test Modes -- Equivalent to ISO/DIS 15031-5

3. Terms and Definitions

3.1 Event Data

Event Data refers to data associated with a motor vehicle event (as defined in SAE J1698).

3.2 Event Data Set

An Event Data Set consists of saved data elements stored in association with an event (as defined in SAE J1698) The in-vehicle storage format of the Data Set is determined by the vehicle design and may be vehicle specific.

3.3 Event Record

An Event Record consists of the translated Event Data Set elements output in association with an event, including 'High Resolution Data', 'Low Resolution Data', and 'Static Data' (ref. SAE J1698). The format of the data in the Event Record shall be consistent with SAE J1698.

3.4 Tool

A tool consists of the hardware and software required to:

a. Make a physical connection to the vehicle SAE J1962 connector using a SAE J1978 tool;
b. Extract the Event Data Set;
c. Generate the Event Record.

4. Process Overview

1. Tool is connected to vehicle SAE J1962 connector.
2. Tool extracts VIN via OBD-II protocol and tool user agrees with extracted VIN. Optionally the tool user enters VIN manually.
3. Assumption: If VIN is verified, then the addressing "scheme" and data retrieval method is determined from a tool database (e.g. which protocol and physical IDs are used to determine the key). Without a valid VIN determination and matching tool database retrieval, no event data will be retrieved.
4. Tool attempts to retrieve the Event Data Set using methods determined from VIN & database.
5. Tool converts Event Data Set into the Event Record per SAE J1968.

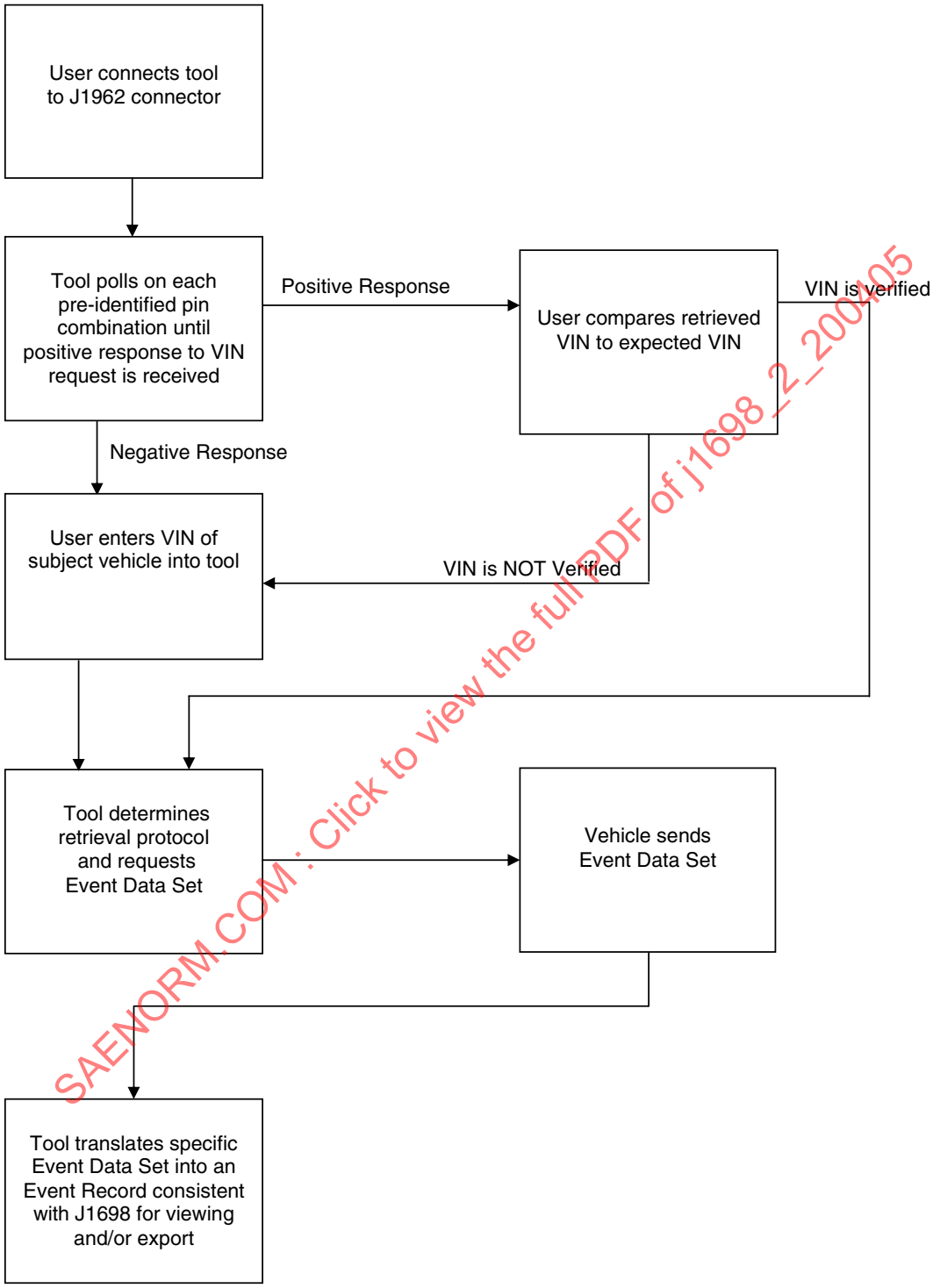

FIGURE 1—VEHICULAR EVENT DATA EXTRACTION PROCESS OVERVIEW

5. Physical Interface

5.1 On-Board Extraction

The SAE J1962 diagnostics connector shall be the primary interface to a vehicle for the purpose of Event Data Set extraction when the Event Data storage device(s) are connected and functioning on a vehicle. There is diversity among vehicle electrical architectures and the utilization of discretionary pins on the SAE J1962 connector. Therefore, the vehicle-specific pin assignments and unique properties of differing electrical architectures shall be stored in a tool database.

5.2 Off-Board Extraction

In order to extract the Event Data Set directly from data storage device(s) that are not functionally connected on the vehicle's operational electronics system, it is necessary to take several factors into account:

- The physical connector and pin assignments utilized by the device supplier.
- The need or absence of the need, for system loads to be present, or not present, for the device to function properly.
- The possibility that the design of the vehicle's electrical architecture may require a gateway, or similar feature, in order for a tool to communicate with the data storage device. A different network protocol or baud rate may be required to communicate directly to the device than the one(s) used to communicate via the SAE J1962 connector.

It is beyond the scope of this document to address all of the specific factors that must be taken into account in order to directly communicate with each data storage device manufactured. However, vehicle manufacturers can choose to make this proprietary information available in the same manner that they provide the details of an individual Event Data Set.

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