



SURFACE VEHICLE RECOMMENDED PRACTICE

J1698™

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Superseding J1698 MAR2017

Event Data Recorder

RATIONALE

This SAE Recommended Practice is being revised in order to make updates to general terms and definitions based on recent discussions in the SAE EDR Committee.

1. SCOPE

This SAE Recommended Practice describes common definitions and operational elements of Event Data Recorders. The SAE J1698 series of documents consists of the following:

- SAE J1698-1 - Event Data Recorder - Output Data Definition: Provides common data output formats and definitions for a variety of data elements that may be useful for analyzing vehicle crash and crash-like events that meet specified trigger criteria.
- SAE J1698-2 - Event Data Recorder - Retrieval Tool Protocol: Utilizes existing industry standards to identify a common physical interface and define the protocols necessary to retrieve records stored by light duty vehicle Event Data Recorders (EDRs).
- SAE J1698-3 - Event Data Recorder - Compliance Assessment: Defines procedures that may be used to validate that relevant EDR output records conform with the reporting requirements specified in Part 563, Table 1 during the course of FMVSS-208, FMVSS-214, and other applicable vehicle level crash testing.

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 J211-1 Instrumentation for Impact Test - Part 1 - Electronic Instrumentation

SAE J670 Vehicle Dynamics Terminology

SAE J1698-1 Event Data Recorder - Output Data Definition

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SAE WEB ADDRESS:

Full document details: SAE J1698_202303

For more information on this standard, visit
https://www.sae.org/standards/content/J1698_202303/

Documents

Document Sharing Hub

SAE J1698-2 Event Data Recorder - Retrieval Tool Protocol

SAE J1698-3 Event Data Recorder - Compliance Assessment

SAE J1962 Diagnostic Connector

2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 National Highway Traffic Safety Administration (NHTSA) Publications

Available from the United States Government Printing Office, 732 North Capitol Street, NW, Washington, DC 20401, Tel: 202-512-1800, <http://www.ecfr.gosv/>.

49 CFR Part 563 Event Data Recorders

2014 FARS/NASS GES Coding and Validation Manual, DOT HS 812 216, Washington, DC November 2015

2.2.2 ANSI Accredited Publications/IEC Publications

Copies of these documents are available online at <https://webstore.ansi.org> or available from IEC Central Office, 3, rue de Varembe, P.O. Box 131, CH-1211 Geneva 20, Switzerland, Tel: +41 22 919 02 11, www.iec.ch.

ANSI/IEC 60529-2004 Degrees of Protection Provided by Enclosures: November 3, 2004

3. DEFINITIONS

3.1 ACCELERATION - G

The rate of change in velocity as a function of time.

NOTE: In this document, the upper case "G" is used to designate the data element name for the acceleration of a vehicle. The lower case "g" is the unit of acceleration ($1\text{ g} = 9.80665\text{ m/s}^2$).

3.2 ACTIVE PEDESTRIAN PROTECTION SYSTEMS

A system of functional components which, under defined conditions, deploy a device(s) which is designed to reduce the physical impact force to a pedestrian.

3.3 ARRAY

An arrangement of data elements in a defined method. In an EDR, an array will consist of an arrangement of data elements sampled at defined time instances for a defined duration.

3.4 AUTHENTICATION AND ENCRYPTION

A technique for ensuring that an EDR record is genuine and that it has not been altered since being imaged and stored by the EDR Retrieval Tool.

3.5 BITMAPPED DATA

Typically used to represent simple "yes/no" questions (e.g., buckled or unbuckled). Bitmapped values are typically packed together with other bit mapped values into one or more bytes.

3.6 COMPLIANCE

The act of adhering to and demonstrating adherence to a standard or regulation.

3.7 CRASH PULSE

The acceleration-time history of the event.

3.8 DATA CAPTURE

The process of buffering certain data, in a temporary volatile storage medium, where it is continuously updated at regular time intervals. This data may be used by the EDR.

3.9 DELTA-V

The cumulative change in vehicle velocity as recorded by the EDR.

3.10 DISPOSAL

The deployment command of the second (or higher, if present) stage of a frontal air bag for the purpose of disposing of the propellant from an air bag device.

3.11 EVENT DATA RECORDER (EDR)

A function within one or more vehicle electronic modules that monitors vehicle and occupant protection system time-series data, prior to and during specific events, defined within the applicable recommended practice, with the intent of retrieving the data after the event. This data is not intended to include freeze-frame type data (non EDR data), diagnostic data, or telematics system data.

3.12 EDR RECORD

Electronic data file(s) stored in non-volatile memory in one or more specified vehicle ECUs following the occurrence of an event.

3.13 EDR RECORD REPORT

The output by an EDR Retrieval Tool designed to image EDR records from motor vehicles and translate the data.

3.14 EDR RETRIEVAL TOOL

An electronic tool consisting of the hardware and software required to:

- a. Make a connection to the vehicle's SAE J1962 connector
- b. Image the EDR record
- c. Authenticate, encrypt, and save the un-translated binary EDR record to a file on a PC
- d. Open and authenticate a saved, un-translated file(s) containing an EDR record(s) and translate it into a human-readable report

3.15 EDR RECORD RETRIEVAL

The process by which an EDR Retrieval Tool images, translates, and reports an EDR record.

3.16 FRONTAL AIR BAG

An inflatable occupant protection system that requires no action by vehicle occupants and is used to meet the applicable frontal crash protection requirements.

3.17 GROUND

Term used with the intention to indicate the local plane on which the vehicle is traveling, not an absolute horizontal plane.