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Event video data recorder for road vehicle accidents –
Part 1: Basic requirements

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EVENT VIDEO DATA RECORDER FOR ROAD VEHICLE ACCIDENTS –

Part 1: Basic requirements

FOREWORD

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The text of this International Standard is based on the following documents:

CDV	Report on voting
100/2839/CDV	100/2947/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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INTRODUCTION

There is a distinction between event video data recorder (EVDR) systems and digital tachographs (DTG, ISO 16844-7), which record vehicle dynamics and the driver's activities during the entire driving period. There is also a distinction between EVDR systems and event data recorders (EDR, IEEE 1616), which record vehicle dynamics and the driver's activities before, during and after the event. DTGs and EDRs both have direct connections to the vehicle's internal signal line, such as in-vehicle network (IVN) or analogue signal line, whereas direct connection is not required for EVDRs.

EVDR systems are prohibited from serving purposes other than the aforementioned. They cannot be placed in unapproved areas and/or not record sound.

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EVENT VIDEO DATA RECORDER FOR ROAD VEHICLE ACCIDENTS –

Part 1: Basic requirements

1 Scope

This part of IEC 63005 describes basic requirements for event video data recorders (EVDRs) for road vehicle accidents, used for identifying and analysing causes of accidents based on video from a front-mounted camera and other information obtained before and after such events. In addition to video from a front-mounted camera and vehicle behaviour, these products can record side and/or rear video data for enhanced functionalities in determining causes of accidents and analysing collision events.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-1:2007, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-27:2010, *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock*

ISO 12233, *Photography – Electronic still picture imaging — Resolution and spatial frequency responses*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

EVDR for road vehicle accidents

system that stores vehicle video data of the accident on an electronic recording medium before, during, and after collision accident events with other vehicles, with passers-by and with any other objects

3.2

event data

information recorded by the EVDR to facilitate analysis of accident scenarios in the case of collision accident events with other vehicles, pedestrians or objects

Note 1 to entry: The term refers to all videos and additional information before, during, and after collision.

3.3

video input information

video data before, during, and after collision that contains video data from the front camera

3.4

vehicle dynamics data

information on a vehicle's dynamic behaviour such as acceleration, angular velocity, and physical quantities related to collision

3.5

integrity verification value

information used to detect doctoring and/or deletion of event data

3.6

DTG for road vehicles

digital tachograph for road vehicles

device that adheres to guidelines on driving records and devices defined in ISO 16844-7

3.7

EDR for road vehicles

event data recorder for road vehicles

system that adheres to IEEE 1616

3.8

interlinked video data recording system for road vehicle accidents

EVDR system interlinked to the DTG or EDR

3.9

independent EVDR for road vehicle accidents

EVDR that operates independently from a DTG or EDR

4 Abbreviated terms and symbols

For vehicle orientation related symbols, see Figure 1.

DTG	digital tachograph
EDR	event data recorder
EVDR	event video data recorder
FOV	field of view
fps	frames per second
g	gravitational acceleration
GPS	Global Positioning System
GNSS	global navigation satellite system
IVN	in-vehicle network
SFR	spacial frequency response
a_x	acceleration in the X_B direction (front and rear) in body fixed coordinates
a_y	acceleration in the Y_B direction (left and right) in body fixed coordinates
a_z	acceleration in the Z_B direction (vertical) in body fixed coordinates
ψ	angular velocity around the Z_B axis in body fixed coordinates (yaw rate)

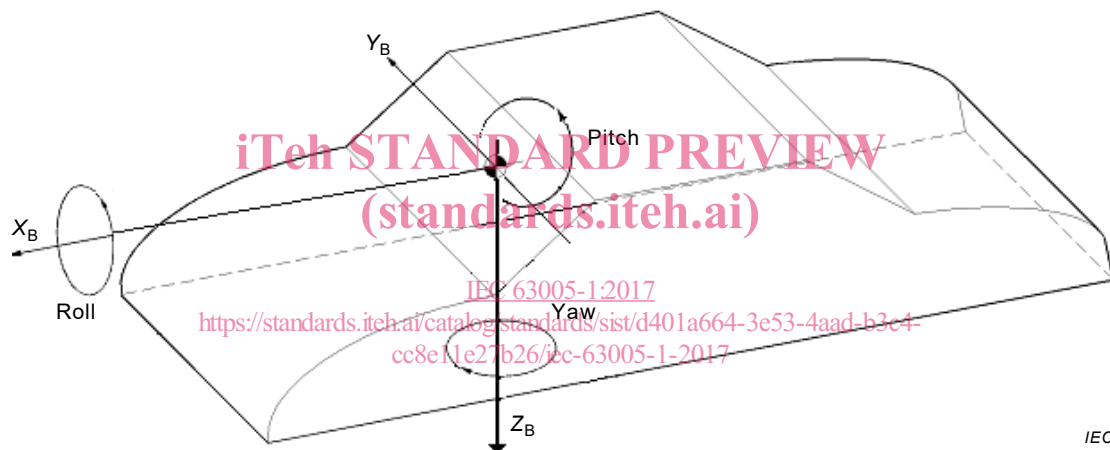


Figure 1 – Standard coordinate system of a vehicle equipped with the EVDR (body fixed coordinates)

5 Types of EVDR

5.1 Classification by security level

EVDRs can be classified into two types listed below depending on the security level.

- 1) General type: EVDR without video-data integrity-checking function for stored event data.
- 2) Enhanced security type: EVDR equipped with video-data integrity verification function for stored event data.

5.2 Classification by interoperability of functions

EVDRs can be classified into two types listed below depending on interoperability with DTG or EDR.

- 1) Independent: EVDRs that operate independently from DTGs or EDRs.
- 2) Interlinked: EVDRs that operate interlinked to DTGs or EDRs.