

第二部

交通事故紛争の証拠としてのEDRの使い方

EDRデータの抽出・解析と実務的活用



第二部の流れ

1.EDRの記録装置と抽出

2.記録条件

3.データの読み解き

4.活用シーン

5.EDRデータ活用の流れ

1.EDRの記録装置と抽出



2.記録条件



3.データの読み解き

IMPORTANT NOTICE: Robert Bosch LLC and the manufacturers whose vehicles are accessible using the CDR System urge end users to use the latest production release of the Crash Data Retrieval system software when viewing, printing or exporting any retrieved data from within the CDR program. Using the latest version of the CDR software is the best way to ensure that retrieved data has been translated using the most current information provided by the manufacturers of the vehicles supported by this product.

CDR File Information

User Entered VIN/Frame Number	ZWR80-0*****
User	
Case Number	
EDR Data Imaging Date	
Crash Date	
Filename	ZWR80-0_ACM_CDRX
Saved on	
Imaged with CDR version	Crash Data Retrieval Tool 24.2.357
Imaged with Software Licensed to (Company Name)	Techno Safety.co
Reported with CDR version	Crash Data Retrieval Tool 24.3.576
Reported with Software Licensed to (Company Name)	Techno Safety.co
EDR Device Type	Airbag Control Module
Event(s) recovered	Front/Rear (1)

Comments

No comments entered.

Data Limitations

CDR Record Information:

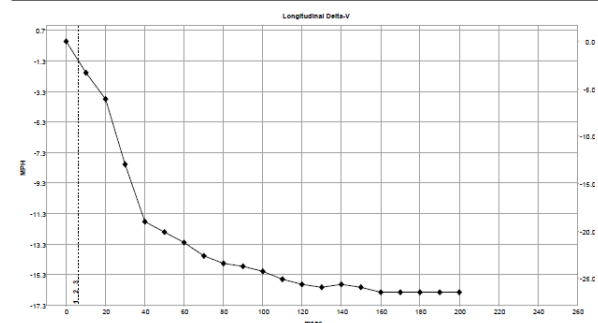
- Due to limitations of the data recorded by the airbag ECU, such as the resolution, data range, sampling interval, time period of the recording, and the items recorded, the information provided by this data may not be sufficient to capture the entire crash.
- Pre-Crash data is recorded in discrete intervals. Due to different refresh rates within the vehicle's electronics, the data recorded may not be synchronous to each other.
- Airbag ECU data should be used in conjunction with other physical evidence obtained from the vehicle and the surrounding circumstances.
- If any of the front passenger seat airbags, side airbags, or Curtain Shield Airbags have deployed, data will not be overwritten or deleted by the airbag ECU following that event. If none of the airbags have deployed, the data of that event may be overwritten by a following event even if other airbags (pretensioner, rear seat airbag, etc.) have deployed.
- If power supply to the airbag ECU is lost during an event, all or part of the data may not be recorded.
- "Diagnostic Trouble Codes" are information about faults when a recording trigger is established. Various diagnostic trouble codes could be set and recorded due to component or system damage during an accident.
- The airbag ECU records only diagnostic information related to the airbag system. It does not record diagnostic information related to other vehicle systems.
- The TaICAN, Global Tech Stream, or Intelligent Tester II (devices or any other Toyota genuine diagnostic tool) can be used to obtain detailed information on the diagnostic trouble codes from the airbag system, as well as diagnostic information from other systems. However, in some cases, the diagnostic trouble codes of the airbag system recorded by the airbag ECU when the event occurred may not match the diagnostic trouble codes read out when the diagnostic tool is used.

General Information:

- The data recording specifications of Toyota's airbag ECUs are divided into the following categories. The specifications for 12EDR or later are designed to be compatible with NHTSA's 48CFR Part 563 rule.
- 06EDR / 02EDR / 04EDR / 06EDR / 10EDR / 12EDR / 13EDR / 15EDR / 17EDR / 19EDR / 21EDR / 22EDR / 23EDR / 24EDR
- The airbag ECU records data for all or some of the following accident types: frontal crash, rear crash, side crash, and rollover events. Depending on the installed airbag ECU, data for side crash and/or rollover events may not be recorded.
- This airbag ECU records record pre-crash data and post-crash data.
- If a single event occurs independently, the data for that event is recorded on a one-to-one basis.
- If multiple events occur successively (within a period of approximately 500ms), the establishment of the recording trigger for the first event is defined as the "pre-crash recording trigger". Pre-crash data for the first event and post-crash data for each successive event is then recorded.
- The airbag ECU has two recording pages (memory maps) to store pre-crash data. Additionally, to store post-crash data, the airbag ECU has two recording pages for each accident type: two pages for frontal and rear crash, two pages for a side crash, and two pages for rollover event.
- The data recorded by the airbag ECU includes correlating information between each previously occurring event (i.e., information that clarifies the collision event sequence). This correlation information consists of the following items.
 - Time from Previous Pre-Crash TRG
 - Linked Pre-Crash Page
 - Time from Pre-Crash TRG
 - TRG Count
 - Previous Crash Type
- In frontal and rear collision events, the first point where a longitudinal cumulative delta-V of over 0.8 km/h (0.5 mph) is reached is regarded as time

Longitudinal Crash Pulse (Most Recent Event, TRG 1 - table 1 of 2)

Recording Status - Time Series Data	Complete
Time from Time Zero to TRG (msec)	6.5
Length of Delta-V (msec)	200
Max. Longitudinal Delta-V (MPH [km/h])	-16.6 [-26.9]
Time Maximum Delta-V Longitudinal (msec)	172.6
Power Supply Status at Max. Delta-V	ON



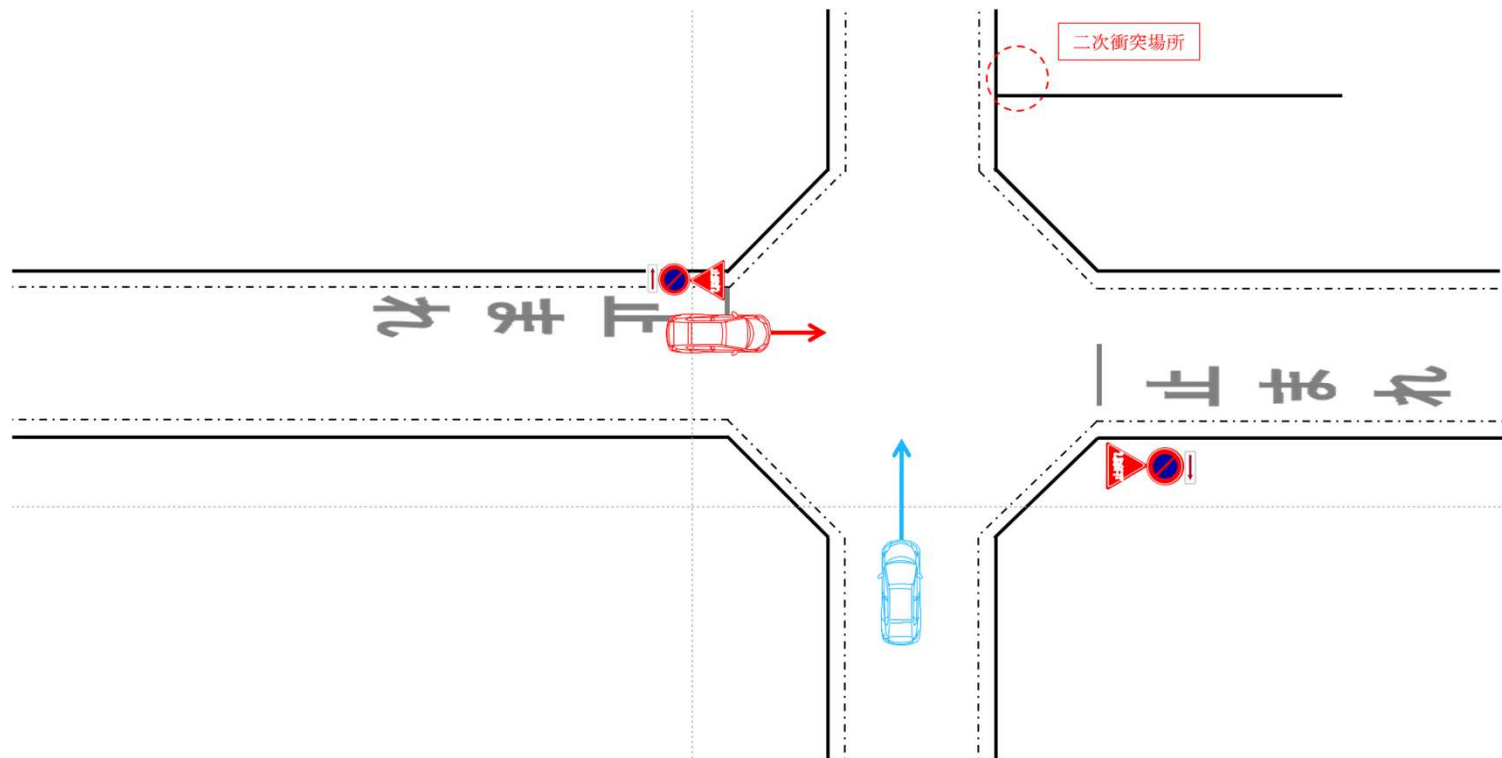
Deployment Time Marker Key
1. Driver Airbag Deployment Time
2. Passenger Airbag Deployment Time
3. Driver Passenger Pretensioner
4. Driver Side Impact Airbag Deployment Time
5. Passenger Side Impact Airbag Deployment
6. Driver Passenger Roll
7. Driver SIDA
8. Passenger SIDA
9. Rear Window Airbag Deployment Time

Time (msec)	Longitudinal Delta-V (MPH [km/h])	Power Supply Status
0	0.0 [0.0]	ON
10	-2.1 [-3.3]	ON
20	-3.8 [-6.1]	ON
30	-8.1 [-13.0]	ON
40	-11.8 [-19.0]	ON
50	-12.6 [-20.1]	ON
60	-13.2 [-21.2]	ON
70	-14.1 [-22.6]	ON
80	-14.6 [-23.4]	ON
90	-14.7 [-23.7]	ON
100	-15.1 [-24.3]	ON
110	-15.6 [-25.1]	ON
120	-15.9 [-25.7]	ON
130	-16.1 [-26.0]	ON
140	-16.2 [-26.3]	ON
150	-16.1 [-26.0]	ON
160	-16.5 [-26.5]	ON
170	-16.5 [-26.5]	ON
180	-16.5 [-26.5]	ON
190	-16.5 [-26.5]	ON
200	-16.5 [-26.5]	ON
210	0.0 [0.0]	ON
220	0.0 [0.0]	ON
230	0.0 [0.0]	ON
240	0.0 [0.0]	ON
250	0.0 [0.0]	ON

Pre-Crash Data, -5 to 0 seconds (Most Recent Event, TRG 1)

Time (sec)	-4.55	-4.05	-3.55	-3.05
Vehicle Speed (MPH [km/h])	34.8 [56]	35.4 [57]	35.4 [57]	35.4 [57]
Accelerator Pedal, % Full (%)	12.0	9.0	8.5	4.0
Percentage of Engine Throttle (%)	Invalid	Invalid	Invalid	Invalid
Engine RPM (RPM)	1,100	1,000	1,000	900
Motor RPM (RPM)	4,700	4,700	4,700	4,700
Service Brake, ON/OFF	OFF	OFF	OFF	OFF
Brake Oil Pressure (Mpa)	0.00	0.00	0.00	0.00
Longitudinal Acceleration, VSC Sensor (m/sec^2)	-1.364	0.072	-0.072	-0.574
Yaw Rate (deg/sec)	-0.98	0.00	-0.49	-0.49
Steering Input (degrees)	0	0	0	0
Shift Position	D	D	D	D
Sequential Shift Range	Undetermined	Undetermined	Undetermined	Undetermined
Cruise Control Status	OFF	OFF	OFF	OFF
Drive Mode, PWR	OFF	OFF	OFF	OFF

4.活用シーン





5.EDRデータ活用の流れ

1.データが取得できるかお問い合わせ

2.運転者と車両所有者から、同意書を取得

3.データ抽出とアナリストレポートの作成

4.データから争点の明確化

5.争点に合わせた解説資料や解析資料作成

EDR取得時にご用意いただきたい情報

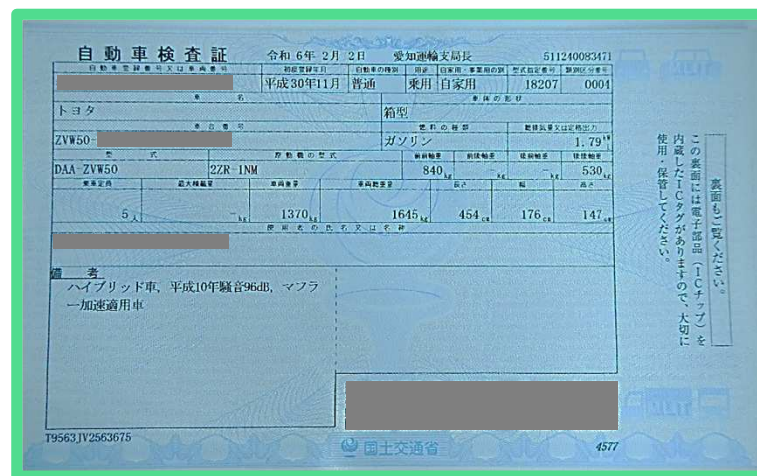
■自動車検査証コピー

メーカー名・車種・車台番号・初度登録年月

■車両保管状況

イグニッション又はACC電源がONになるか・保管されている環境

■事故日



自動車検査証 令和 6年 2月 2日 愛知運輸支局長 511240083471

自動車検査証又は車検票	初度登録年月	自動車の種類	用途	自動車検査証の別	型式指定番号	類別区分番号
	平成30年11月	普通	乗用	自家用	18207	0004

車名 トヨタ 箱型

車台番号 ZVW50- ガソリン 総排気量又は定格出力 1.79^{kW}

型式 DAA ZVW50 2ZR-1NM 総排気量 840 cc 総重量 530 kg

乗車定員 5人 最大総重量 1370 kg 車両重量 1645 kg 軸重 前軸 454 kg 後軸 176 kg 全長 147 cm

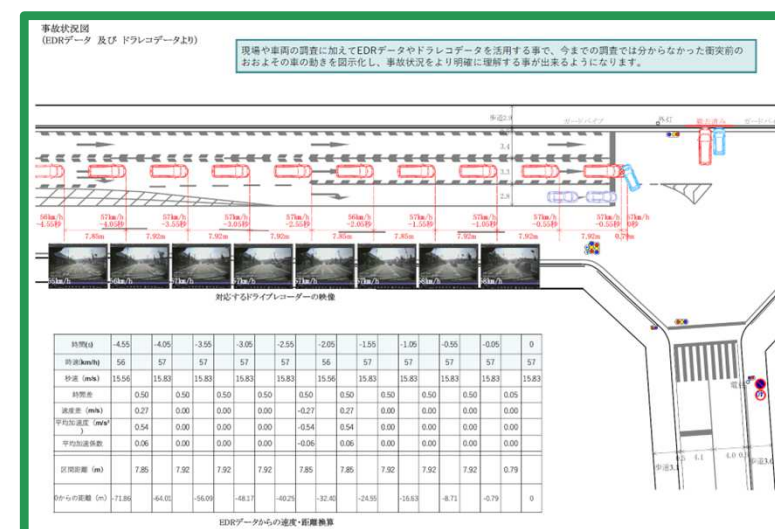
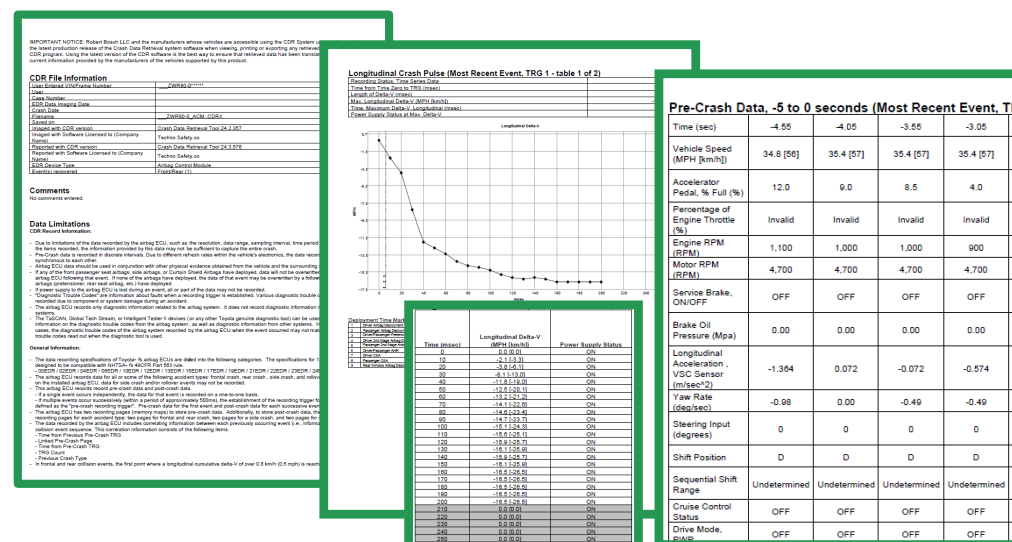
備考 ハイブリッド車、平成10年騒音96dB、マフラー加速適用車

この表面には電子部品（ICチップ）を内蔵したICタグがあり、そのため、大切に使用・保管してください。

国土交通省 4577

以下ご希望の方はお問い合わせください

- EDRデータや解析資料のサンプルが欲しい
- EDR活用についてより詳細な説明を聞きたい
- EDR勉強会に参加したい（web参加もご相談ください）



第一部：セーフティワークス
<https://www.safework.jp>



第二部：株式会社テクノ・セイフティ
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Mail : tecnotokyo@tecnosafety.co.jp



協賛：合同会社nitro