CDR WITNESS STATEMENT

Statement of:

_____

This statement (consisting of   page(s) each signed by me) is true to the best of my knowledge
and belief and I make it knowing that, if it is tendered in evidence, I shall be liable to prosecution if I have wilfully
stated anything in it, which I know to be false or do not believe to be true.

Signature: Date: date_closing_report

_____

About   time   on   tion of the
accident   .

About   time   on   where I
took a number of ph   se images
were saved to a mas   ntained on
that disc, have been   bit no.
)..

I am aware that   br   e storage of
EDR data. Event Data Recorders (EDR) are devices installed in motor vehicles to record technical vehicle and
occupant information for a brief period of time (seconds, not minutes) before, during and after a crash. EDRs are
devices which record information related to an 'event'.

Signature   )

Continuation of statement of   Name

Bosch Corporation's Crash Data Retrieval System (CDR)

Bosch Corporation's Crash Data Retrieval System (CDR) is a tool used to image (taking a mirror copy) data from an airbag module with an EDR function. This system acts as an interface allowing a PC to be connected to the Diagnostic Link Co within the CDR tool converts this code i's battery and wiring harness had not bee CDR tool. About time on Module. The Event Data Recorder (EDRg present. This data was saved to a masge of the data, in the form of a 'Crash Da data, a CDR Report was generated, whi). The *.cdrx file stores data imaged

As a result of analysis of that CDR Report and information made available to me, I have produced a collision analysis and reconstruction report, which I produce in evidence, as an exhibit, labelled   registration   (exhibit no.   ).

Signature

                name

Collision Analysis CDR Report

time   on   day   date   year

  location of the accident

Internal Reference: rapport number

Photographic Reference: doc number

Collision Data Reference: doc number

Investigating Analyst: **name**

Download Technician: **name**

                                name

This report in its entirety is a single exhibit and should not be separated

Table of Contents

1.0 Author's qualifications and experience

1.1 I have been a   your tittle   since   year   and have been a member of the   police force or company since   year   , during which time I have attended and dealt with many and varied road traffic collisions.

1.2 I hold the following qualifications:-

- A Bachelor of Science Degree
- Certificates in Police Forensic Collision Investigation
- Certificate in Motor Vehicle Inspection
- Advanced Automotive Engineer (AAE)

1.3 I am a full member of the following Professional Bodies:-

- The EUDARTS-GROUP of CDR Technology
- The Institute of Traffic Accident Investigators (ITAI)
- The Institute of the Motor Industry (IMI)
- The Chartered Society of Forensic Sciences (CSFS)
- European Association for Accident Research and Analysis (EVU)

1.4 I have attended specialist courses   name of the courses

1.5 I have successfully completed the Bosch / EUDARTS-GROUP approved European Crash Data Retrieval (CDR) Data Analyst Course of the CDR Operator Certification (Certified Technician and Analyst). Certification / student number   number   [1]

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[1] registered www.eudarts-group.com expert page

2.0   Basis of this Report

2.1   As an expert witness, I understand that my overriding duty is to the Court.   Expert evidence will be provided on matters within my expertise, based upon the reconstruction of the physical evidence and the witness accounts tendered for examination. I understand that this duty overrides any obligation to the person or organization from whom I have received instructions.

2.2   I can confirm that I have complied with that duty in writing my report and to the best of my knowledge that the facts stated are true and the opinions I have expressed are correct.

2.3   This reconstruction report is based upon the fundamental and acceptable laws of physics and applied mathematics.

2.4   Any conclusions drawn are my own, it is for the Court to attribute such weight to this evidence as it sees fit. The conclusions are based upon the evidence made available and any subsequent investigations performed. Should new evidence become available I reserve the right to reconsider and alter any conclusions made.

3.0 Introduc

3.1 The Boso ... ows a
Collision ... nage
crash dat ... which
is stored ... ed
decisions

3.2 An Event ... tor
vehicle, t ... ne
(seconds ... ssing
vehicle s ...
EEPROM (memory chip). For example, EDR's may record,

- Pre-crash vehicle dynamics and system status (i.e. speed, braking)
- D
- V
- R ... se)
- F ... fication
  (
- D ... ollision
  (

4.0 Investigation

It should be noted that the following synopsis is a brief outline or general view of the facts

surro...

4.1 I unde...

About   t...   tion   . The

collis...

1   brand

2   brand

3   brand

4   brand

brief des...

REPLACE
with pictures of the
scene of the incident

Figure 1: view of the scene of the incident

REPLACE
with pictures of the
scene of the incident
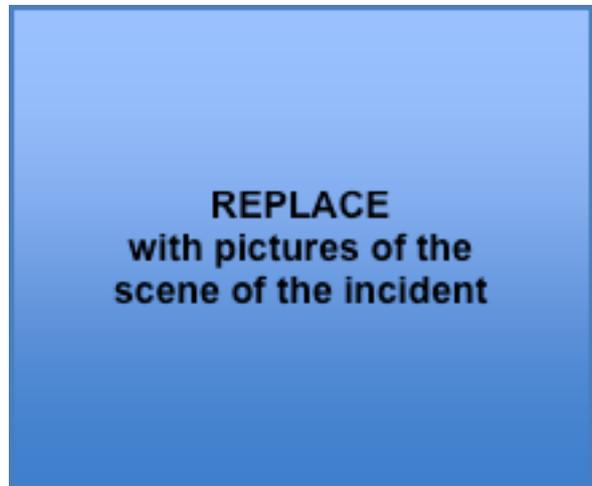
Figure 2: view of the scene of the incident

4.2 I have been requested, by ___name___, of the ___name organization___ to examine the
Airbag   and
relevant

4.3 At time   stigation
is held   rbag
Control

4.4 In prepar   pared
by ___na___   notes
prepared   he
photogr   ts or
interview

4.5 My inspection process was structured in 3 stages:

1. Physical vehicle inspection
2. Imaging of ACM data
3. Analysis of ACM data

Figure 3 – View showing the Bosch CDR Tool connected to the   brand / model   DLC (Diagnostic Link Connector).

Figure 4 – View of the mileage of the   brand / model

5.0   Roadw

5.1   The inc

5.2   Descrip

5.3   This se

5.4   Accord   surface
       was dr   with its
       age an
       uninter   excess of
       some

6.0 Vehicle Examination

6.1 Vehicle details: brand / model   ,

license Plate   ,

The vehi   umber
speed ma
The vehic
Odomete
MOT exp

6.2 Prior to m   The
brand / m   ation
on   date

6.3   To summ   l / rear
damage.   t could
have caused, or contributed, to the collision occurring.

REPLACE
with pictures of the
scene of the incident

Figure 5 – View showing the damage of the   brand / model   .

6.4 Inspection of the headlamp bulbs showed   no / slight / extensive distortion of the
nearside   pection
of the re
indicatin

6.5 Examina   and /
typet yre   nent
manufac

6.6 The left   PSI. The
left rear   he right
front tyr   ight rear
tyre had

7.0 brand / model , license Plate , Airbag Control Module Data

7.1 The   brand / model   is equipped with a Supplementary Restraint System (SRS), which includes an Airbag Control Module (ACM), which also includes an Event Data Recorder (EDR), stor███. There was ██es and plugs w███ Diagnostic ██ memory wh██le Programma███

7.2 On this ACM██ is a record of w███icle communica██at appendix A██gger threshold to███r a 'non-deploy██en change in direction and/or rotation of the vehicle that "wakes-up" or "enables" the ACM, but makes ███ braking.

7.3   "Time to ███ are subject to v███case to case and██es.

7.3 The ACM wa██ 1422V0336███R data was su███ata, in the form ██e as an exhibit, I███████████████████████████████████

This is an encrypted, read-only, file. If any of the data is changed, the file will not open and it will state the data has been corrupted.

8.0 ACM EDR Data Analysis (example Toyota)

8.1 The CDR report file information indicates that there was   number   trigger event(s) recorded.

Longitudina

Time (msec)
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150

Ignition cycles

complete and

8.2 The airbag system is a Supplementary restraint System (SRS). The primary restraints are the   mechanical seat belts / the   airbags.   This data, accompanied with the observed vehicle dama   l / maximal   da   nt would have b   to control.
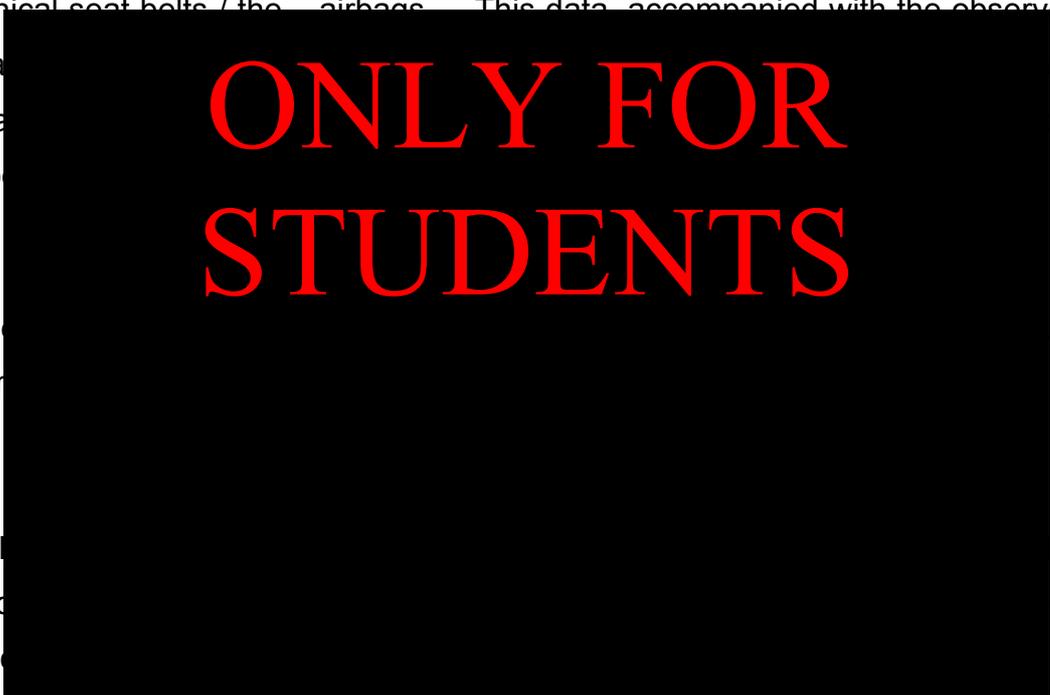
8.3 Analysis of th   m deceleration   is changing by

8.4   In order for t   he crumple struc   V" indicates the

This does not refer to vehicle speed, and it does not include the change in speed during the period from the start of the actual collision to establishment of the recording trigger.

8.5 This AC

Pre-Crash

Time (sec)		(TRG)
Vehicle Speed		2 [26]
Brake Switch		ON
Accelerator Rat		0.78
Engine RPM (R		400
Pre-Crash Data		ON

8.6 Analys mph. The Toyota

8.7 At 4.3 (38.5 m and the brake switch was 'on'. Toyota records acceleration data in voltage (V), from a sensor, rather than as a percentage. Zero acceleration pedal is typically 0.78V and 100% is 3.79V.

8.8 At 3.3 (38.5 m s 'off'.

8.9 At 2.3 (38.5 m 'off'.

8.10 At 1.3 36 mph, the acc he brake switch seconds. Data w d at 2.29 second

8.11 At 0.3 (-0.3) second prior to the collision, the Toyota's speed was reported as 26.1 mph, the accelerator pedal was at 0.0% and the brake switch remains 'on'.

8.12 At 0.0 (-0.0) seconds, the trigger event, the Toyota's speed was reported as 16.2 mph, the accel⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛ at 0.0% and the brakes switch was in (⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛

9.0 Summar⬛

9.1 The Toy⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛ he A24 Findon E⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛es per second), ⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛g.

9.2 All data co⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛control unit has ⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛nd, the time of t⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛vailable evidence⬛⬛

9.2 Analysis ⬛⬛ the recovered data and the circumstances of this collision indicate that the recorded data is related to this collision.

9.3 Analysis indicates the speed of the Toyota, at impact with the Ford Fusion, is some 16.2mph ⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛012-01-0998) su⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛mph – 14.7mph⬛

9.4 Analysis ⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛ Crash Data Ret⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛peed is changing⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛ared to emergen⬛

9.5 EDR data⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛

9.6 EDR data⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛on rate applied t⬛

10.0   Acknowledgments & Bibliography

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- EU Da   Toyota Event
- Forens
- Forens
- Highw
- Hillier,   nology, 6th edit
- Ishikaw   (2009). Study   ol Units (ECUs   *national Confer*
- Ordna
- Takubo, N., Ishikawa, H., Kato, K., Okuno, T., Oga, R., Kihira, M., & Ikari, T. (2009). *Study on Characteristics of Event Data Recorders in Japan* (No. 2009-01-0883). SAE Technical Paper

11.0 Statement of Truth

In compliance with Lord Woolf report and Part 35 Civil Procedure Rules:-

"I confirm that insofar as the facts stated in my report are within my own   knowledge I have made clear which they are and I believe them to be true,   and that the opinions I have expressed represent my true and complete   professional opinion." (sic)

Report completed by:
A qualified Investigator.
Dated:

12.0   CDR Glossary of Terms

ACK	Acknowledgment
ACM	Airbag Control Module
ACU	Airbag Control Unit - the Nissan designation for the ACM found in Nissan vehicles
AHR	Active Head Restraint
BMW	Bavarian Motor Works AG vehicles - includes BMW, MINI and Rolls-Royce brands
CAN	Controller Area Network
CDR	Cras
D2M	Direc
Daimler	Daim
DLC	Diag
DTC	Diag
ECU	Elect
EDR	Even
EPPM	Elect
ESC	Elect
ESP	Elect
ETC	Electronic Throttle Control
ETR	Engineering Translation Report
FCA	Fiat Chrysler Automobiles vehicles - includes Alfa Romeo, Chrysler, Dodge, Fiat, Jeep, Lancia, Maserati, RAM and SRT brands
Ford	Ford Motor Company vehicles - including Ford, Lincoln and Mercury brands
General Motors	General Motors Company vehicles (also known as GM) - includes Buick, Cadillac, Chevrolet, Geo, GMC, Holden, HSV, Hummer, Oldsmobile, Opel, Pontiac, Saab and Saturn brands
GM	General Motors
Honda	Honda Motor Company Ltd. Vehicles - includes Acura and Honda brands
MY	Model Year
NHTSA	National Highway Traffic Safety Administration (USA)
Nissan	Nissan Motor Company Ltd. Vehicles - includes Infiniti and Nissan brands
NTSB	National Transportation Safety Board (USA)
OBD II	Onboard Diagnostic system version 2
OE	see OEM
OEM	Original Equipment Manufacturer (also known as OE) - in the automotive industry, refers to the car ma

ORC   Occupant Restraint Control - the FCA designation for the ACM found in FCA vehicles

PCM   Powertrain Control Module

PC   Personal Computer

PPM   Pedestrian Protection Module

RCM   Restraint Control Module - the Ford designation for the ACM found in Ford vehicles

ROS   Roll Over Sensor

SDM   Sensing Diagnostic Module - the General Motors designation for the ACM found in General Motors vehicles

Toyota   Toyota Motor Corporation vehicles - includes Lexus, Scion, and Toyota brands

VIN   Vehicle Identification Number

Volkswagen   Volkswagen Group vehicles - includes Audi, Bentley, Lamborghini and Volkswagen brands

13.0   Appendix A - Bosch Crash Data Retrieval File