Stakeholder Meeting

Safety Benefits of Event Data Recorders: Background and Technical Scope

Presented by David Hynd

Agenda

Stakeholder Meeting – safety benefits of event data recorders

1	Welcome
2	Project background and technical scope
3	EDR fitment, technical aspects and specifications
4	EDR access, data protection and confidentiality
5	EDR benefits and costs
6	EDR implementation
7	Conclusions and closure

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Safety Benefits of Event Data Recorders

DEFINITION

Event Data Recorder

For the purposes of this study, an EDR is defined as:

A system for recording vehicle data during unintended events with harmful outcomes (i.e. damage or injury), with no continuous monitoring of driver behaviour or performance

Safety Benefits of Event Data Recorders

Introduction

Project Background

- European Parliament resolution on European road safety 2011-2020
  - Called on the Commission:

    to provide for the phased introduction, initially in rented vehicles and subsequently also in commercial and private vehicles, of an integrated accident recorder system with a standardised readout which records relevant data before, during and after accidents

- EC committed to examine the added value of installing EDR on improving road safety in Europe
  - In particular for professional vehicles
  - Part of the approach to halving the overall number of road deaths in the EU by 2020, compared to a 2010 baseline

Safety Benefits of Event Data Recorders

Introduction

- Technical Scope
  - Analyse the benefits that could result from the installation of EDR, particularly for road safety but not excluding other benefits
  - Consult with stakeholders
  - Provide policy recommendations based on a cost-benefit analysis of the possible legislative or other measures

Safety Benefits of Event Data Recorders

Introduction

- Technical Scope
  - Different fleets
    - Heavy goods vehicles
    - Light goods vehicles
    - Buses and coaches
    - Cars for commercial use
    - Cars for private use
  - Encouragement
    - By regulation?
    - By other measures?

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Introduction

Overview of the approach

- Collect and analyse legislations, studies and scientific literature relating to EDRs
  - Analyse the benefits to road safety and any indirect benefits
  - Document the experience with EDRs inside and outside the EU
  - Analyse access to EDR data and confidentiality issues
  - Discuss the technical issues relating to the fitment of EDR
- Stakeholder questionnaire and face-to-face meeting
- Assess the costs and benefits
- Prepare recommendations on the measures to be adopted

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Examples of EDR users and their applications

User	Application
Manufacturers	Improve the safety of motor vehicles
	Evaluate correct operation of vehicle systems for development and litigation cover
Governments	Improve vehicle safety standards
	Improve infrastructure safety standards
	Reduce road fatalities, injuries and damage, and the associated societal costs
Vehicle owner/driver	Access to justice
Prospective vehicle buyer	Determine if a vehicle has previously been involved in an accident
Fleet operators	Reduced accident (injury and damage) claims
	Reduced fraud

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Examples of EDR users and their applications

User	Application
Police	Impartial accident information
Courts	Objective data for civil and criminal legal proceedings
Solicitors and independent forensic accident investigators	Objective data to support expert witness statement and reduced reliance on (potentially unreliable) witness statements
Insurers	Faster and more accurate settlement of cases (with reduced costs)
Researchers	More accurate association of crash severity and injury outcome, to improve vehicle structures and restraint systems
	Improved understanding of driver involvement in collisions
Emergency responders	Improved triage (NB this benefit would probably require EDR data to be associated with eCall data)

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Introduction

EDR in Other Regions

- Part 563 in US
  - Mandatory from 1 September 2014
  - >96% new car fleet already fitted
  - Low rate pre- and post-crash data
  - More precise crash-phase data (250 ms)
- Korea adopting EDR legislation
  - Based on Part 563
- Japan proposed similar legislation
  - Based on Part 563
  - With additional parameters

Safety Benefits of Event Data Recorders

Introduction

Objective of the Consultation

- Collect the opinions of stakeholders regarding the deployment on motor vehicles of event data recorders to improve road safety and access to justice
- The findings from this consultation will be taken into account in the final reporting of the study

Safety Benefits of Event Data Recorders

Introduction

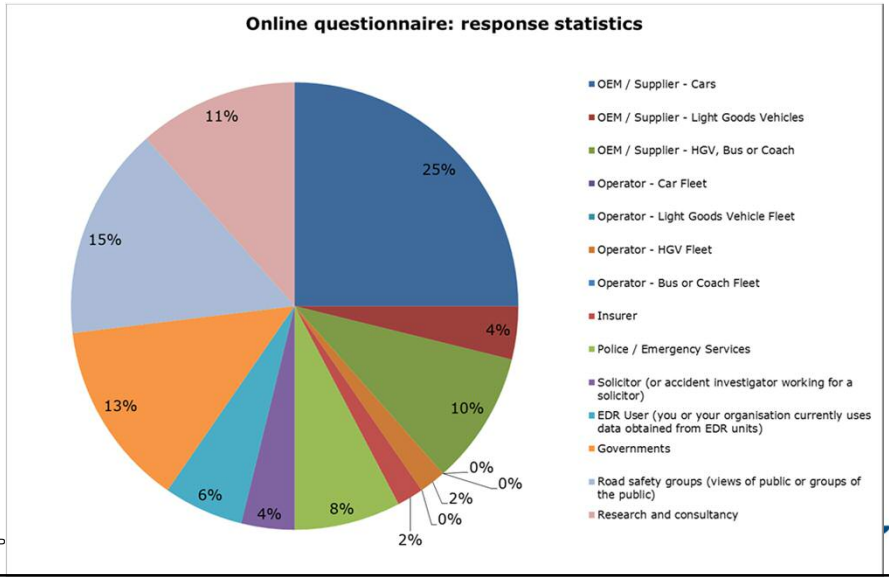
Questionnaire

- 109 started
- 62 partially completed
- 47 completed

- Representation from a wide range of stakeholders…

Safety Benefits of Event Data Recorders

Introduction



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EDR Fitment, Technical Aspects and Specifications

Passenger cars (for commercial and private use)

- What proportion of the European car fleet already has EDR technology fitted?
- What is the cost of fitting the technology to the remaining vehicles?
- Are there any technical or legal barriers to mandating fitment of EDRs?
- Should the fitment of EDRs be mandated? If not, how should deployment of effective EDR technologies be promoted?

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EDR Fitment, Technical Aspects and Specifications

Passenger cars (for commercial and private use)

- Should EDR and eCall technologies be integrated?
- If EDR fitment is mandated, what are the suitable Type Approval procedures to ensure that data is recorded in a collision and that the data have suitable accuracy?
- Does the EDR specification in 49 CFR Part 563:
  - Provide sufficient harmonisation of EDRs?
  - Record all of the data that would be required for accident investigation?
  - Do manufacturers use this data?

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EDR Fitment, Technical Aspects and Specifications

Light commercial vehicles (vans and mini-buses)

- What proportion of the European light commercial vehicle fleet have EDRs or components of EDR technology fitted?
- What proportion of the European light commercial vehicle fleet has driver's airbags? Could the airbag control module form the basis of an EDR?
- What would be the most effective technological approach to implementing EDR capability in light commercial vehicles? For example, options may include: stand-alone EDR device; expanding the capability of the driver's airbag control module.
  - What would be the cost of these options?

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EDR Fitment, Technical Aspects and Specifications

Light commercial vehicles (vans and mini-buses)

- How should deployment of effective EDR technologies be promoted?
- Should EDR and eCall technologies be integrated?
- If EDR fitment is mandated, what are the suitable Type Approval procedures to ensure that data are recorded in a collision and that the data have suitable accuracy?

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EDR Fitment, Technical Aspects and Specifications

Heavy commercial vehicles (goods vehicles, buses and coaches)

- What proportion of the European heavy commercial vehicle fleet have EDRs or components of EDR technology fitted?
- What would be the most effective technological approach to implementing EDR capability in heavy commercial vehicles? For example, options may include: stand-alone EDR device; adding EDR capability to the digital tachograph; expanding the capability of the driver's airbag control module (and possibly mandating fitment of a driver's airbag in all heavy commercial vehicles).
  - What would be the cost of these options?

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EDR Fitment, Technical Aspects and Specifications

Heavy commercial vehicles (goods vehicles, buses and coaches)

- How should deployment of effective EDR technologies be promoted?
- If EDR fitment is mandated, what are the suitable Type Approval procedures to ensure that data are recorded in a collision and that the data have suitable accuracy?
- What would be an appropriate method to ensure recording of pedestrian and cyclist collisions?

Agenda

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EDR Data Access and Use

Data protection and confidentiality issues

- Who owns the data recorded by the EDR?
- Who has access to the data recorded by the EDR?
- Under which circumstances will these data be accessible?
- What are acceptable uses of the data?

Event Data Recorders

EDR Data Access and Use

Data protection and confidentiality issues

- What are the confidentiality concerns and how can they be addressed?
- What is the adequate/feasible legal framework to address these issues?
- Does the law in any European country conflict with the mandated fitment of EDRs or access to EDR data?

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EDR Benefits and Costs

- What are the benefits of EDRs? How should these be monetised?
- What is the effect of an EDR (that does not include any continuous recording function) on driver behaviour?
- What are the costs of exploiting EDR data, e.g. analysing the data for liability or research purposes? Does the use of EDR data save costs overall compared to traditional accident reconstruction methods?

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EDR Implementation

- Which variables should be recorded and at what sampling rate?
- Is there any technical reason why the status/activation of all safety systems cannot be recorded?
- In the US, Part 563 requires that EDR data (from cars) must be available to users. Most car manufacturers have interpreted this to mean that a third-party tool should be available for purchase. However, the car manufacturer does not control the implementation of the third-party tool, including whether the interpretation and presentation of the EDR data by the third party is accurate. At least one manufacturer's interpretation of Part 563 means that downloaded EDR data have to be sent to the manufacturer, which will interpret the data and provide a report. This adds a considerable overhead to the application of EDR data. What is an appropriate definition of the availability of EDR data?

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EDR Implementation

- Is there a need to certify tools used to download data from an EDR, e.g. to ensure that the interpretation and presentation of the data is accurate and traceable? If so, what are the requirements for certification?
- Is there a need to improve triggering compared with current devices in order to record collisions with pedestrians and cyclists? If so, what are the cost implications of this?
- Should downloaded EDR data be explicitly linked to the vehicle concerned, e.g. to ensure the traceability of evidence?

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EDR Implementation

- Is there a need to implement anti-tamper measures within EDRs, e.g. to prevent modification or deletion of the EDR data?
- Are there any training requirements for persons responsible for downloading and exploiting EDR data (e.g. police officers, road safety officials)? Should these roles be limited to certified persons only?
- Should there be a central European database of downloaded EDR data for road safety research? If so, what other information should be stored (e.g. injury severity, injury types, occupant age)? Should access to and use of such a database be controlled?

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Conclusions

- Summary from today's discussions

Do You Have Any Questions?

Thank you
EDR Stakeholder Meeting

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