



Training material and course presentation

**Deliverable 8.4**





# Training material and course presentation

Work package 8, Deliverable 8.4

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# 1 Introduction



## 1.1 PURPOSE OF THIS DELIVERABLE

This Deliverable summarises the activities and products of SafetyCube's task 8.4 "Training and support for road safety stakeholders on the use of the Decision Support System". The aim of this task was to develop a series of training activities to increase the knowledge amongst stakeholders about the nature and availability of the evidence base within SafetyCube.

## 1.2 DEVELOPMENT OF TYPE AND CONTENT OF TRAINING TOOLS

In various stakeholder workshops during the earlier phases of the project, attendees were asked about both, required content and functionalities of the SafetyCube Road Safety Decision Support System (DSS) and about related training activities. In relation to the latter, the following four tools were identified and implemented:

1. Physical workshop
2. Quick guides
3. Introductory and instructional videos
4. Webinar

## 2 Physical Workshop with stakeholders: DSS Launch Event

The DSS was officially opened during a launch workshop on 5 October 2017, in the Nordic House in Brussels (see Figure 1). Around 30 stakeholders from various European and national / regional organisations and authorities attended. See Annex 1 for the workshop invite.

Functionalities and contents of the DSS were presented to the audience and discussed in breakout groups. With regard to the further required training tools, the message from the attendees was that no further physical workshops would be necessary to train users of the DSS, but rather (short) manual(s), videos, and “not-too-long webinar”, all to be made available online on the DSS webtool.



Figure 1: Taking a break at the DSS launch event on 5 October 2017, in the Nordic House in Brussels

## 3 Quick Guides to the DSS

There are two short manuals available for the DSS, one for the various search functions in the DSS and one for the Economic Efficiency Evaluation ("E<sub>3</sub>") Calculator. The manuals were written by KfV and VIAS institute, with support by NTUA.

### 3.1 A QUICK GUIDE TO SEARCH FOR RISK FACTORS & MEASURES

This twelve-pages document outlines in simple steps and hand-on examples how to dispatch a query and how to interpret, control and filter the various entries on the results and study pages.

The pdf is available at the DSS's main search page (see Figure 3) or under the following link:  
<https://www.roadsafety-dss.eu/assets/data/pdf/A.Quick.Guide.to.the.SafetyCube.DSS.pdf>

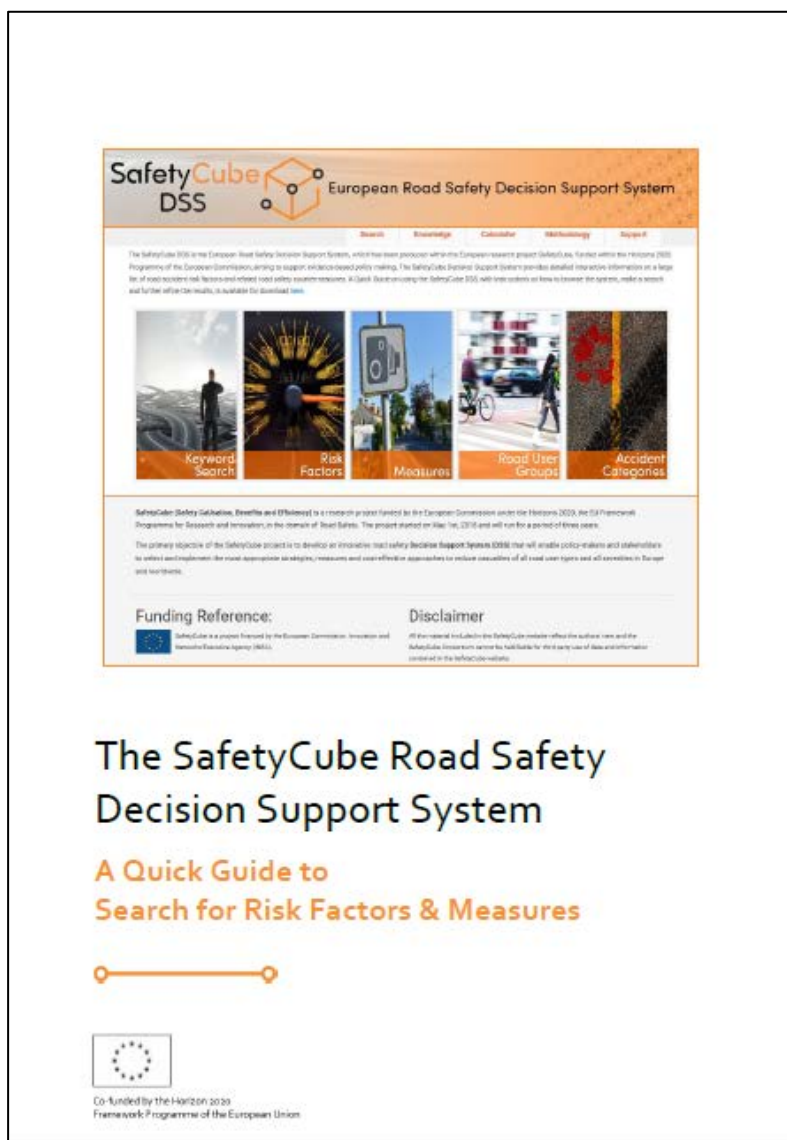


Figure 2: The SafetyCube DSS's Quick Guide to Search for Risk Factors & Measures

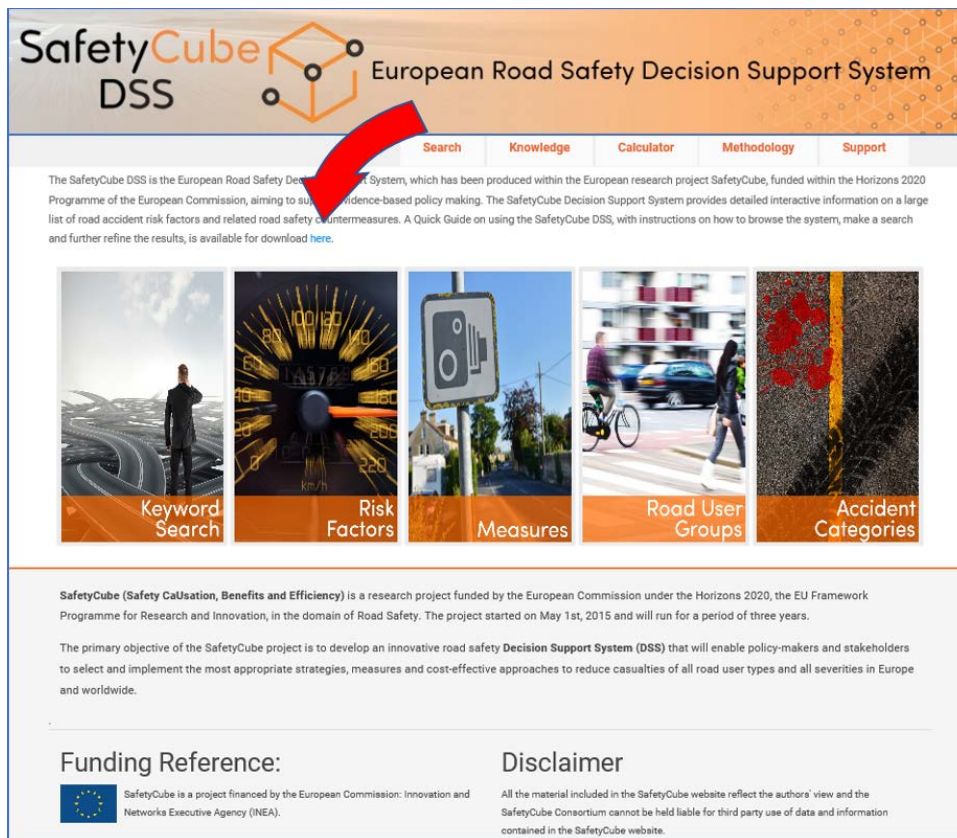


Figure 3: Accessing the SafetyCube DSS's Quick Guide to Search for Risk Factors & Measures

### 3.2 A MANUAL FOR THE ECONOMIC EFFICIENCY EVALUATION ("E3") CALCULATOR

The manual for the so-called E3-Calculator describes in detail how it can be used to evaluate the economic efficiency of interventions. The tool allows for the combination of information about the effectiveness of a measure (the number of prevented crashes or casualties), the costs of the measure, and the monetary value that is assigned to the avoidance of crashes and casualties (see Figure 4).

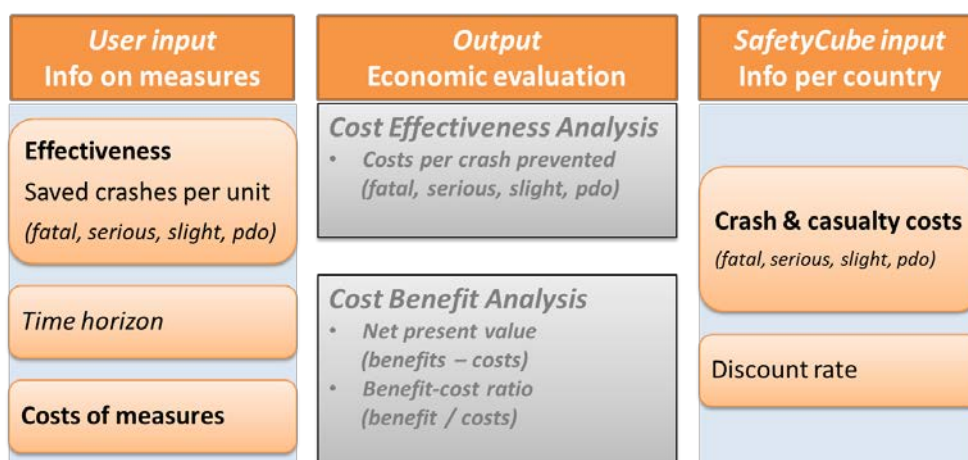
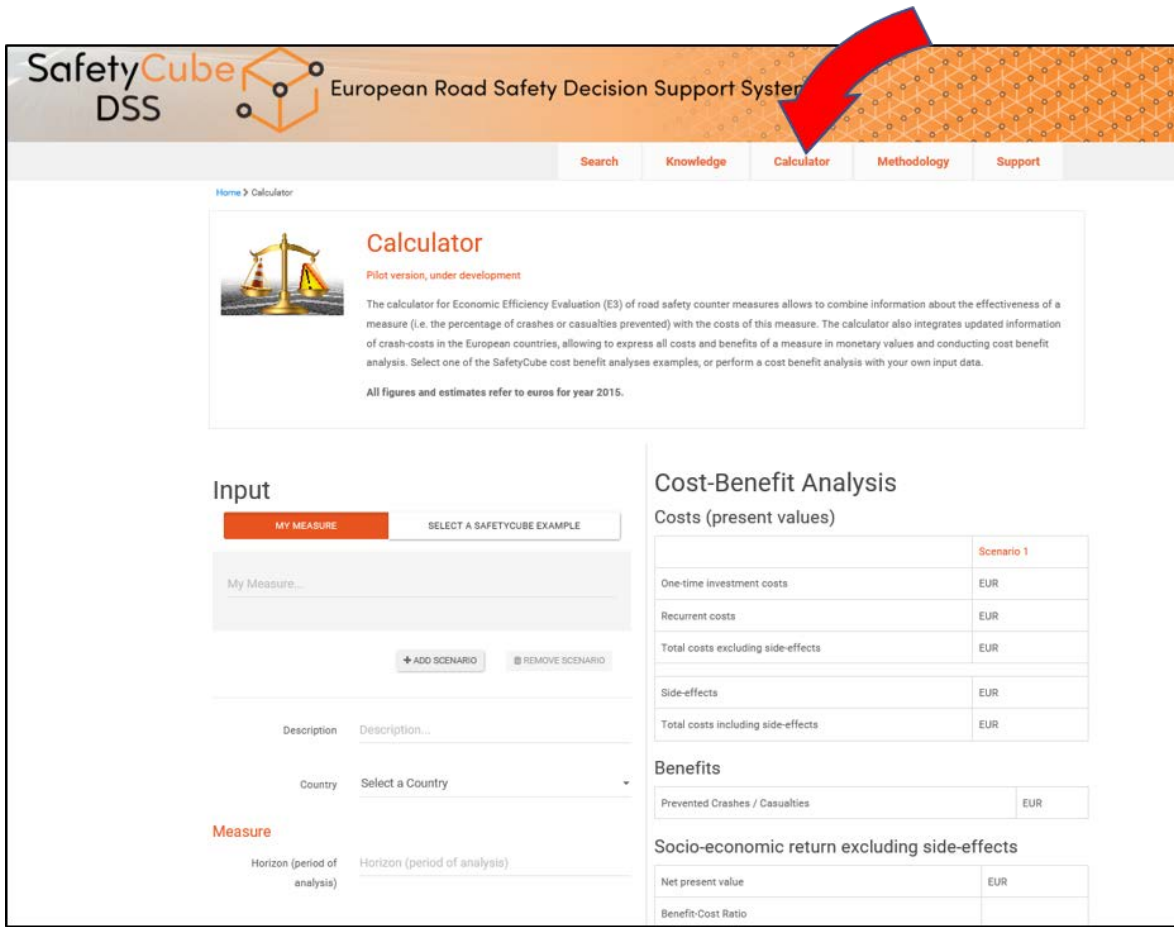


Figure 4: The components of the SafetyCube DSS's Economic Efficiency Evaluation ("E3") Calculator

The pdf is available at the DSS's E3 Calculator page (see Figure 5) which is available at the following link: <https://www.roadssafety-dss.eu/#/calculator>



**SafetyCube DSS** European Road Safety Decision Support System

Search Knowledge **Calculator** Methodology Support

Home > Calculator

## Calculator

Pilot version, under development

The calculator for Economic Efficiency Evaluation (E3) of road safety counter measures allows to combine information about the effectiveness of a measure (i.e. the percentage of crashes or casualties prevented) with the costs of this measure. The calculator also integrates updated information of crash-costs in the European countries, allowing to express all costs and benefits of a measure in monetary values and conducting cost benefit analysis. Select one of the SafetyCube cost benefit analyses examples, or perform a cost benefit analysis with your own input data.

All figures and estimates refer to euros for year 2015.

### Input

MY MEASURE SELECT A SAFETYCUBE EXAMPLE

My Measure...

ADD SCENARIO REMOVE SCENARIO

Description Description...

Country Select a Country

**Measure**

Horizon (period of analysis) Horizon (period of analysis)

### Cost-Benefit Analysis

#### Costs (present values)

	Scenario 1
One-time investment costs	EUR
Recurrent costs	EUR
Total costs excluding side-effects	EUR
Side-effects	EUR
Total costs including side-effects	EUR

#### Benefits

Prevented Crashes / Casualties	EUR
--------------------------------	-----

#### Socio-economic return excluding side-effects

Net present value	EUR
Benefit-Cost Ratio	

Figure 5: Accessing the SafetyCube DSS's manual for the Economic Efficiency Evaluation ("E3") Calculator

## 4 Introductory and instructional videos

The DSS features an introductory video to the system and seven instructional videos as a visual hands-on guide how to dispatch a query and how to interpret, control and filter the various entries on the results and study pages. The videos were produced in a joint effort by KfV, SVOV and LOUGH, and integrated in the DSS by NTUA.

### 4.1 INTRODUCTORY VIDEO

An animated video (length: 90 sec) describes in common-sense language the contents and functionalities of the DSS:

- What is (new about) the DSS?
- The links between risks and measures
- The contents across the whole sphere of road safety: human behaviour, infrastructure, vehicles, post-impact care
- Taxonomies of risks & measures
- Opportunities to provide feedback



Figure 6: The introductory video to the SafetyCube's DSS

The video is available at the DSS's main Search Page (see Figure 7) or at:

<https://www.youtube.com/watch?v=Y-mVUde3knU>



Figure 7: Accessing the SafetyCube DSS's introductory video

#### 4.2 INSTRUCTIONAL VIDEOS FOR ENTRY POINTS

Five instructional videos present each of the five so-called entry points, through which the user can dispatch queries. They can be accessed directly at the respective entry points, see Figure 8.



Figure 8: Accessing the SafetyCube DSS's instructional videos for entry points

The following table list the videos for entry points together with their links.

Entry point	Link
Keyword Search	<a href="https://www.youtube.com/watch?v=3xlOw6w5z1U">https://www.youtube.com/watch?v=3xlOw6w5z1U</a>
Risk Factors	<a href="https://www.youtube.com/watch?v=efg57qBQobU">https://www.youtube.com/watch?v=efg57qBQobU</a>
Measures	<a href="https://www.youtube.com/watch?v=_XPqttNpv5A">https://www.youtube.com/watch?v=_XPqttNpv5A</a>
Road User Groups	<a href="https://www.youtube.com/watch?v=T3WHIJzq3os">https://www.youtube.com/watch?v=T3WHIJzq3os</a>
Accident Categories	<a href="https://www.youtube.com/watch?v=cjgsknRPoQo">https://www.youtube.com/watch?v=cjgsknRPoQo</a>

#### 4.3 INSTRUCTIONAL VIDEO FOR THE RESULTS PAGE

An instructional video describes in detail how to interpret, control and filter the various entries on the results page. It is available directly on the results page, see Figure 9, or at <https://www.youtube.com/watch?v=g6rc7YPmGkM>

**SafetyCube DSS** European Road Safety Decision Support System

Home > Reference Results

**Specific Measure**

- ☐ reduction of speed limit
- ☐ dynamic & weather-variant speed limits
- ☐ Dynamic speed display signs
- ☐ speed cameras
- ☐ section control
- ☐ speed humps
- ☐ woonerfs implementation
- ☐ narrowings implementation
- ☐ 30-zones implementation
- ☐ traffic calming schemes
- ☐ school zones speed reduction measures

**Road User Group**

- ☐ ALL
- ☐ BUS
- ☐ CAR
- ☐ CYCLIST
- ☐ HGV
- ☐ PEDESTRIAN

**Search Results**

The following information on "Speed management & enforcement" fulfill your search criteria. Refine your search, view the SafetyCube Synopses, choose a study to obtain more detailed information, or go to the respective Road Safety Measures.

**Implementation of Woonerfs:** ● GREY (UNCLEAR RESULTS) -

The results from the analysed literature show that implementing Woonerfs and similar schemes overall lead to reduced accident and speeding rates. Significant positive results were found in studies published before 1990, but the findings of the newer studies in this synopsis were not able to support the older findings because no statistical analysis was undertaken in the new studies. In addition, the results for shared space schemes were more mixed.

**Implementation of Narrowings:** ● LIGHT GREEN (PROBABLY EFFECTIVE) -

In this synopsis, the results of all but one study were based on speed, an indirect safety indicator. In the only accident study, other measures/features were also involved (e.g. speed-activated signs), which may have contributed to the positive effect. Overall, vehicle speeds decreased and drivers started to decelerate further away from the intersection/crossing when narrowings were implemented. Most results were statistically significant.

**School zones:** ● LIGHT GREEN (PROBABLY EFFECTIVE) -

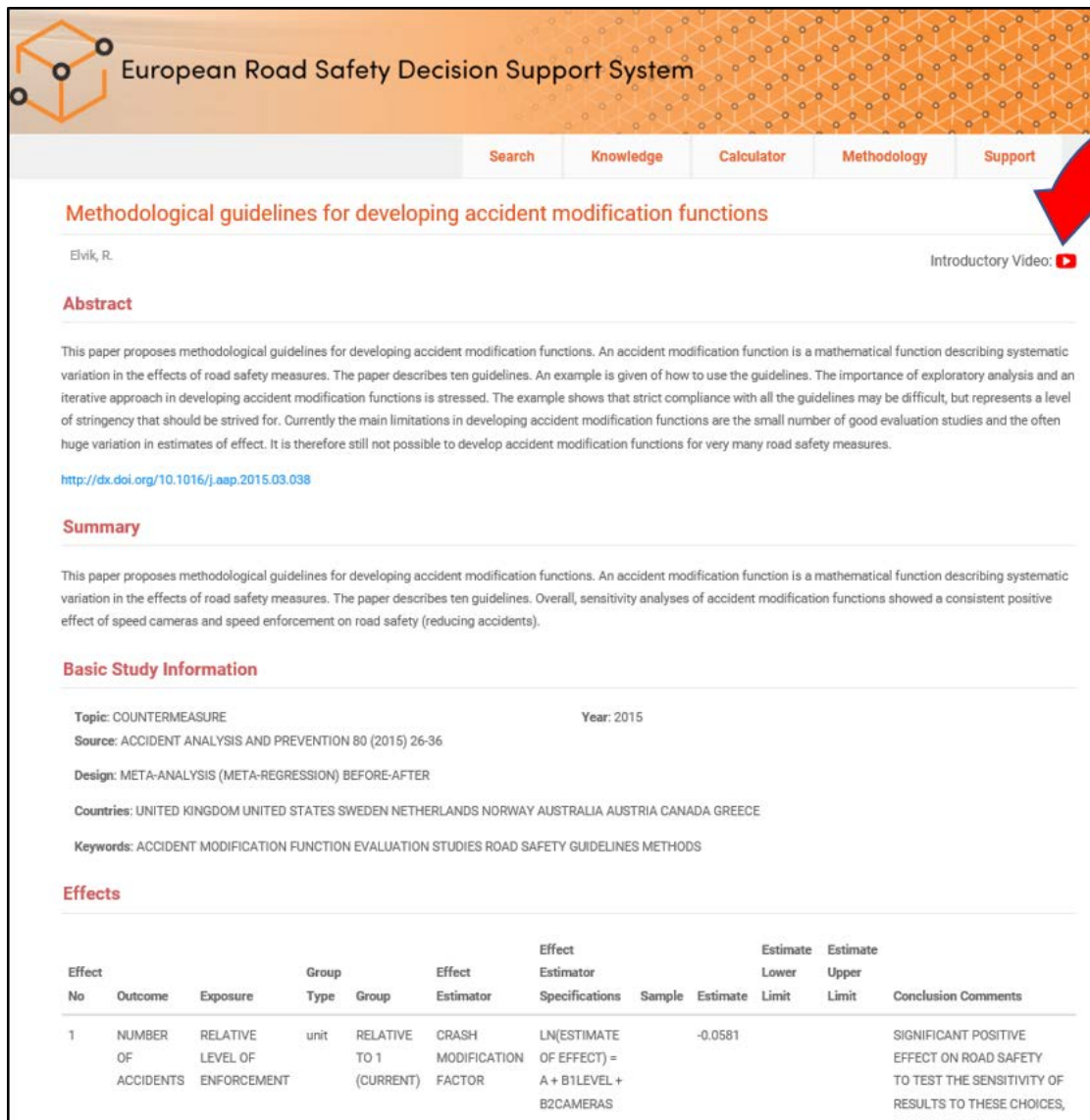
There is some indication that the installation of school zones can help to reduce speeds and improve road safety near schools. However, despite some improvements, there are still indications of frequent speeding and enhanced traffic risk in school zones.

Introductory Video:

Figure 9: Accessing the SafetyCube DSS's instructional video for results page

#### 4.4 INSTRUCTIONAL VIDEO FOR THE STUDY PAGE


An instructional video describes the setup of the DSS's study pages. It is available directly on the study page, see Figure 10, or at <https://www.youtube.com/watch?v=UvzAP5zI670>.



**European Road Safety Decision Support System**

Search Knowledge Calculator Methodology Support

### Methodological guidelines for developing accident modification functions

Elvik, R. Introductory Video: 

#### Abstract

This paper proposes methodological guidelines for developing accident modification functions. An accident modification function is a mathematical function describing systematic variation in the effects of road safety measures. The paper describes ten guidelines. An example is given of how to use the guidelines. The importance of exploratory analysis and an iterative approach in developing accident modification functions is stressed. The example shows that strict compliance with all the guidelines may be difficult, but represents a level of stringency that should be strived for. Currently the main limitations in developing accident modification functions are the small number of good evaluation studies and the often huge variation in estimates of effect. It is therefore still not possible to develop accident modification functions for very many road safety measures.

<http://dx.doi.org/10.1016/j.aap.2015.03.038>

#### Summary

This paper proposes methodological guidelines for developing accident modification functions. An accident modification function is a mathematical function describing systematic variation in the effects of road safety measures. The paper describes ten guidelines. Overall, sensitivity analyses of accident modification functions showed a consistent positive effect of speed cameras and speed enforcement on road safety (reducing accidents).

#### Basic Study Information

Topic: COUNTERMEASURE Year: 2015  
Source: ACCIDENT ANALYSIS AND PREVENTION 80 (2015) 26-36  
Design: META-ANALYSIS (META-REGRESSION) BEFORE-AFTER  
Countries: UNITED KINGDOM UNITED STATES SWEDEN NETHERLANDS NORWAY AUSTRALIA AUSTRIA CANADA GREECE  
Keywords: ACCIDENT MODIFICATION FUNCTION EVALUATION STUDIES ROAD SAFETY GUIDELINES METHODS

#### Effects

Effect No	Outcome	Exposure	Group Type	Group	Effect Estimator	Specifications	Sample	Estimate	Estimate Lower Limit	Estimate Upper Limit	Conclusion Comments
1	NUMBER OF ACCIDENTS	RELATIVE LEVEL OF ENFORCEMENT	unit	RELATIVE TO 1 (CURRENT)	CRASH MODIFICATION FACTOR	LN(ESTIMATE OF EFFECT) = A + B1LEVEL + B2CAMERAS		-0.0581			SIGNIFICANT POSITIVE EFFECT ON ROAD SAFETY TO TEST THE SENSITIVITY OF RESULTS TO THESE CHOICES, ANALYSIS WAS FIRST

Figure 10: Accessing the SafetyCube DSS's instructional video for study page

## 5 Webinar

A webinar was held on 10 April 2018 and was scheduled to last for 60 minutes. It provided both background information on the SafetyCube project and the DSS design as well as hands-on examples for the practical use of the DSS.

The webinar was set up by KfV. Speakers on behalf of the SafetyCube team were:

- Pete Thomas, Loughborough University
- Stijn Daniels, VIAS Institute
- Eleonora Papadimitriou, NTUA
- Wendy Weijermars, SWOV
- George Yannis, NTUA
- Susanne Kaiser, KfV

Invitations were sent to representatives of the IRTAD, FERSI and ETSC networks, as well as to all registrants of the SafetyCube Final Conference in Vienna and the subscribers of the SafetyCube newsletter. The newsletter invite can be found in Annex 2.

As for attendance, 101 addressees followed the invitation link, 63 registered, and 43 finally took part in the webinar. Participation statistics show that virtually all participants were present throughout the entire meeting (see Figure 11, the webinar took place at the time between the red bars). The reach of the webinar was truly global as the list of registrants included delegates from Europe, Australia, New Zealand, USA, Israel and Iran.

A recording of the webinar was made available both on the SafetyCube website ([www.safetycube-project.eu](http://www.safetycube-project.eu)) and the DSS ([www.roadsafety-dss.eu](http://www.roadsafety-dss.eu)).

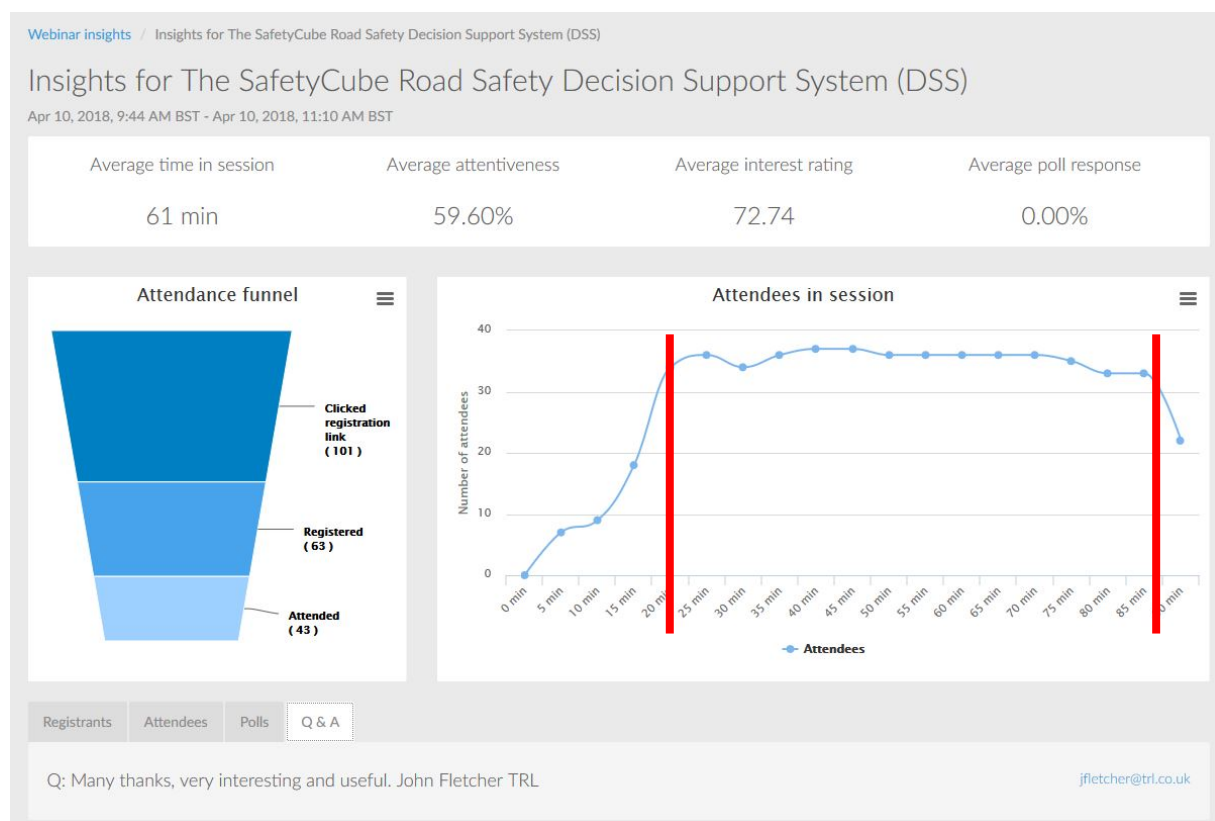


Figure 11: Participation statistics of the SafetyCube webinar on 10 April 2018.

# Annex 1: Invitation to the DSS Launch Event



## SafetyCube

Decision Support System Launch Event

Brussels, October 5, 2017

Nordic House

Rue du Luxembourg 3,

B-1000 Bruxelles,

Belgium

10 a.m. - 15 p.m

**Purpose:** The SafetyCube Decision Support System (DSS) has become a functioning prototype with almost all functionality in place. The project team is proud to present the system for public access and will hold a first workshop to present and demonstrate the tool.

Participation is free, but registration is required


### Agenda

9:30-10:00	Registration
10:00-10:30	How to support decision making – The SafetyCube Approach
10:30-11:00	Decision Support System – The SafetyCube Road Safety Resource
11:00-12:00	DSS Demonstrations with Audience Interaction
12:00-13:00	Lunch
13:00-14:00	DSS Demonstration and review of feedback from initial users
14:00-14:45	Breakout sessions
14:45-15:00	Closing discussions
15:00	Adjournment



Co-funded by the Horizon 2020  
Framework Programme of the European Union

# Annex 2: Invitation to the webinar




This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 633485

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**SafetyCube**

**WEBINAR**  
**Road Safety**  
**Decision Support**  
**System**



Next Tuesday, on April 10, 2018 at 11.00 CET a webinar on the European road safety Decision Support System (DSS) will take place. The webinar concerns a one-hour training session for the use of the DSS, in which the system will be presented, including the alternative options and the various queries that users can make in order to have access to the knowledge of the DSS, as well as the available results.

The team of the EU Project SafetyCube will present you with all functionalities of the powerful tool ([www.roadsafety-dss.eu](http://www.roadsafety-dss.eu)) and provide you with hands-on examples. Learn how the DSS can make your life in road safety easier!



**Webinar**

- April 10, 2018 at 11.00 CET
- [More information](#)

**Register now**

**Topics**

- Introduction to the SafetyCube project and methodology
- Functionalities of the DSS: Query functions, knowledge base and cost-benefit assessment
- Hands-on examples

**Presenters**

- Prof. Pete Thomas | Loughborough University | UK
- Prof. George Yannis | NTUA | GR
- Stijn Daniels | VIAS | BE
- Eleonora Papadimitriou | NTUA | GR
- Wendy Weijermars | SWOV | NL
- Susanne Kaiser | KFV | AT

**Who should attend?**

Everybody with a stake in road safety - from private persons and practitioners to scientists and decision makers