National Technical University of Athens
Road Safety Observatory
www.nrso.ntua.gr

Monday
15
May
at 14:00

Workshop

in the framework of the

FOURTH UNITED NATIONS GLOBAL ROAD SAFETY WEEK
8-14 May 2017

Save Lives
#SlowDown

The future of road safety research

NTUA Zografou Campus, Athens
Railways Amphitheatre of the
Department of Transportation Planning and Engineering

The European Road Safety Decision Support System
SafetyCube

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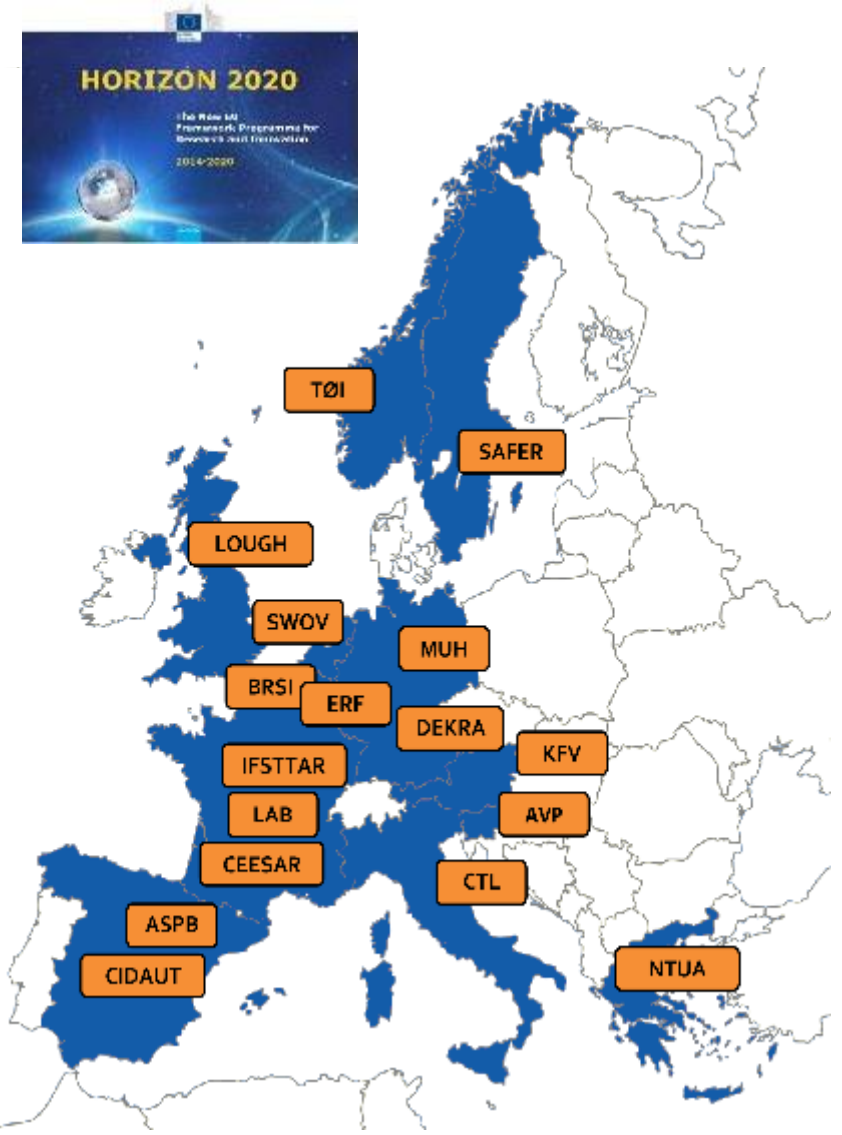
The SafetyCube project

- **SafetyCube** - Safety CaUsation, Benefits and Efficiency
  www.safetycube-project.eu
- May 2015 - April 2018

- Objective: to provide the European and Global road safety community a user friendly, web-based, interactive **Decision Support System** (DSS) to properly substantiate their road safety decisions for measures, programmes, policies and strategies to be implemented at local, regional, national, and European level.

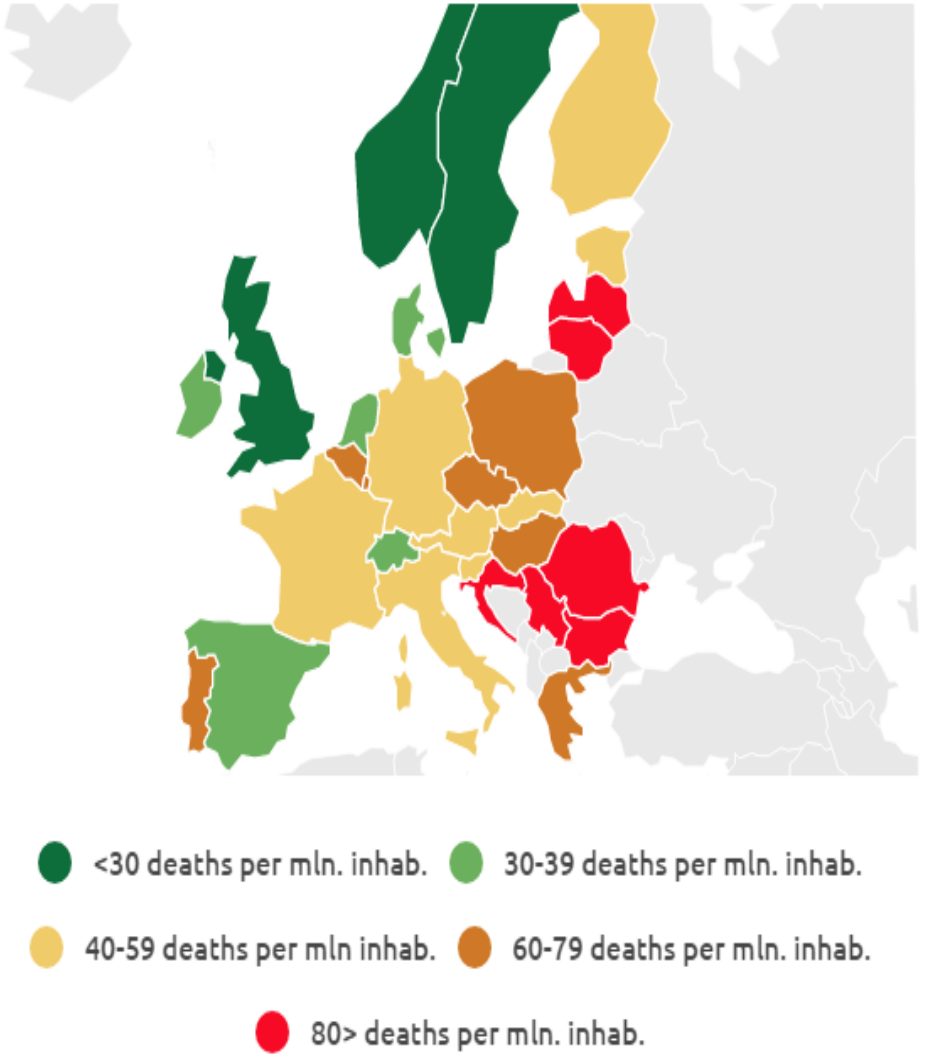
- The **main contents** of the SafetyCube DSS concern:
  - road accident risk factors
  - road safety measures
  - best estimate of effects on casualty reduction
  - cost-benefit evaluation
  - all related analytic background



Road safety trends

- **Worldwide** the total number of road fatalities has plateaued
- High road fatality rates in low-income countries
- **In the EU** over 2010-2015 there was 17% reduction in fatalities (far less than the required reduction to meet the EU target to halve road deaths by 2020)
- **2% decrease** in fatalities in the EU between 2015-2016
- Road fatalities **in Greece** in 2016 also presented an increase (1%), ending an impressive drop during the economic crisis.

(Sources: ELSTAT, EC, ETSC, WHO)



Despite the important efforts and improvements,
the rate of progress seems to be halted,
and needs to be considerably higher in the next years,
in Greece, in Europe and internationally.

The need for evidence-based policies

- Road safety is a typical field with high risk of important efforts not bringing results

- **Evidence based road safety policies** are indispensable
  - for more targeted road safety improvements in good performing countries
  - for transferring good practices in poor performing countries

- Several road safety DSS worldwide but mostly on measures, mostly on infrastructure, none focused on the EU context

- Need for high quality and accessible information about both **accident causes (risk factors) and measures** on infrastructure, behaviour and vehicle.

Methodological challenges

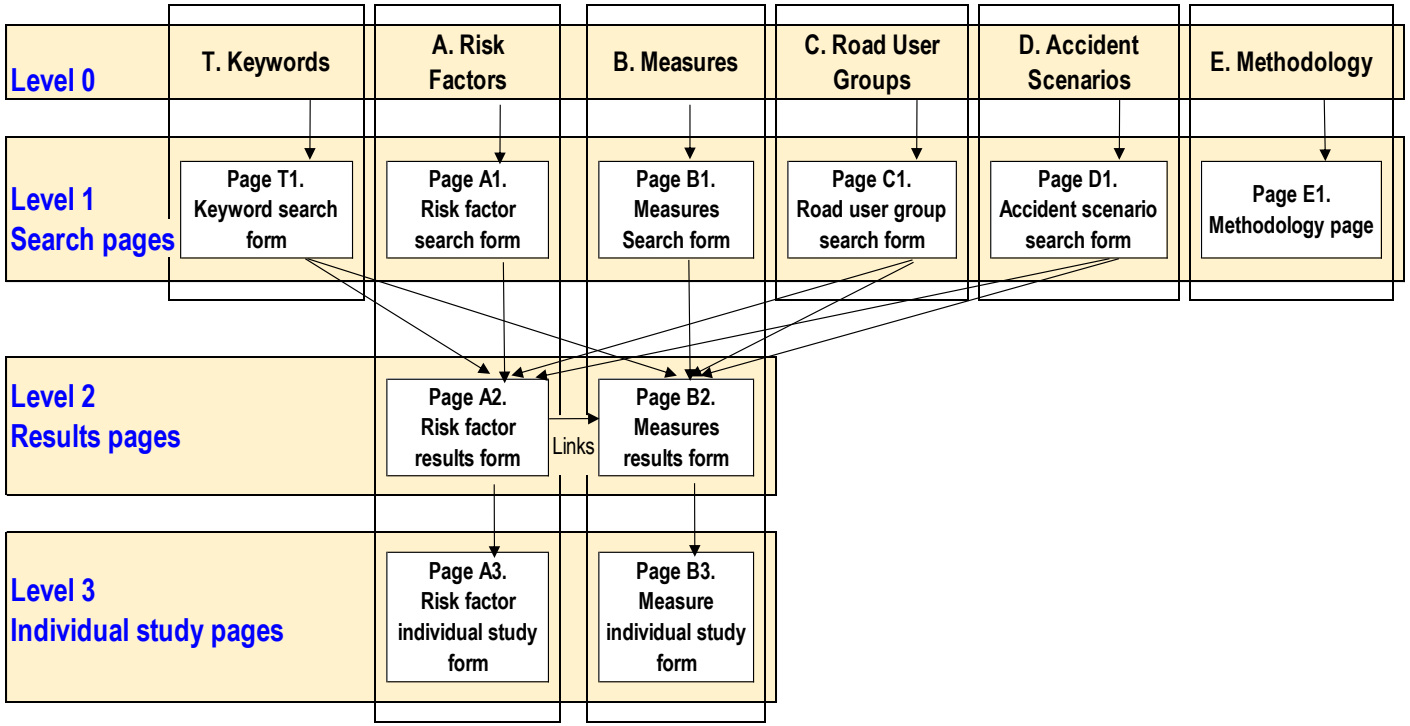
- **Compiling and synthesizing the scientific evidence**
  - Creating a taxonomy of risk factors and measures
  - Exhaustive literature review and rigorous study selection
  - "Coding" studies to be introduced in the DSS database
  - Carrying out meta-analyses to estimate the effects of risk factors / measures.
  - Summarising results of risk factors / measures.
  - Integrating the outputs in a DSS

- **Design and development of a DSS**
  - Modern and web-based
  - High Ergonomy interface
  - Simple structure
  - Powerful and flexible Search Engines
  - Fully Documented information

Overview of the SafetyCube DSS

- **Five entry points**
- **Search pages**
- **Results pages**
  - Syntheses (meta-analyses) available
  - Listing relevant studies
  - Refine search
  - Filters
  - Links to related measures

- **Individual study pages**
  - Title, author, source, abstract
  - Study design info
  - Listing the effects reported in the study



DSS on-line demo: risk factor “speed”

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www.roadsafety-dss.eu/

The SafetyCube European Road Safety Decision Support System (DSS) is one of the key objectives of the SafetyCube project to better support evidence-based policy making. The SafetyCube results will be assembled in the form of a Decision Support System that will present for each suggested road safety measure: details of the risk factor tackled, the measure itself, the best estimate of casualty reduction effectiveness, the cost-benefit evaluation and the analytic background. While the development and evaluation of the measures will be developed into a format and structure that will enable industry, policy-makers and other stakeholders to access the information in an efficient manner within the DSS.

Keyword Search | Risk Factors | Measures | User Groups | Accident Categories

Behavior	Infrastructure	Vehicle
Speed choice	Traffic flow	Prevalence of pedestrian factors in crash data
Influenced driving - alcohol	Road type	Vehicle design
Influenced driving - drugs	Road surface deficiencies (risk of ran-off road)	Crashworthiness
Risk taking	Poor visibility and lighting	Visibility / Conspicuity
Fatigue	Adverse weather	Prevalence of cyclists factors in crash data
Distraction and inattention	Workzones	Visibility / Conspicuity
Functional Impairment	Horizontal/vertical alignment deficiencies	Prevalence of PTW factors in crash data
Insufficient skills	Superelevation / cross-slopes	Protective equipment design
Insufficient knowledge	Lanes deficiencies	Technical defects / Maintenance

Questions addressed by the DSS

- How important is a road safety problem?
- What measures are usually proposed for this problem?
- How to quantify measure effects and cost-effectiveness?
- And if existing evidence disagree, how to synthesise?
- What would be the likely effect of a measure not yet introduced to the real-world?
- How to assess transferability from one country to another?
- How can the available information be accessed by stakeholders?
- ….

SafetyCube DSS added value

- SafetyCube DSS is **the first integrated road safety support system** developed in Europe
- SafetyCube DSS offers for the first time **scientific evidence** on:
  - risks and not only measures
  - risks and measures not only on infrastructure
  - a very large number of estimates of risks and measures effects (Risk Factors: 670 studies with more than 3.500 effects, Measures: 750 studies with more than 3.500 effects)
  - links between risks factors and measures
- **SafetyCube DSS Opening mid 2017** http://www.roadsafety-dss.eu/
- SafetyCube DSS aims to be **a reference system** for road safety in Europe, constantly improved and enhanced.

Future challenges

- SafetyCube DSS is a unique to opportunity to demonstrate the need for evidence based policies with a great potential to trigger the **systematic evaluation of all measures** and interventions implemented in Europe and worldwide.

- **Transferability** of road safety risk factors and best practice across Europe and worldwide is a great challenge and it can be approached only by providing detailed quantitative information as SafetyCube DSS does.

- Exchange of quantitative results customized to decision makers needs offered by SafetyCube DSS, might **upgrade the effectiveness** of the not negligible road safety investments and ultimately lead to spectacular road casualty reductions worldwide.

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