



National Technical University of Athens  
Road Safety Observatory

[www.nrso.ntua.gr](http://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 CEDR Road Safety APM  
and CMF Repository  
**PRACT**

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Together with:  
Alexandra Laiou, George Yannis

# The PRACT project



## Predicting road accidents - A transferable methodology across Europe

(<http://www.practproject.eu/>)

Apr 2014 – May 2016

Repository on-going operation ([www.pract-repository.eu/](http://www.pract-repository.eu/))

funded by the National Road Authorities of Germany, Ireland, UK and the Netherlands

within the Transnational Research Programme on Safety of the European Conference of Road Directors (**CEDR**)



UNIVERSITÀ  
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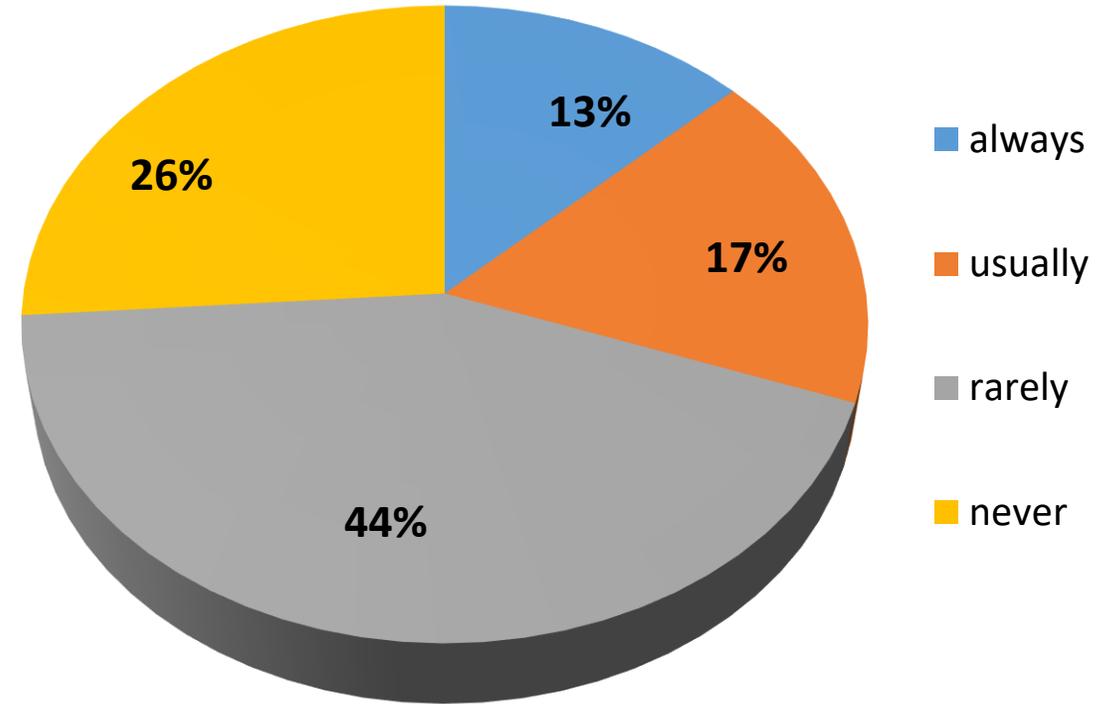


Imperial College  
London



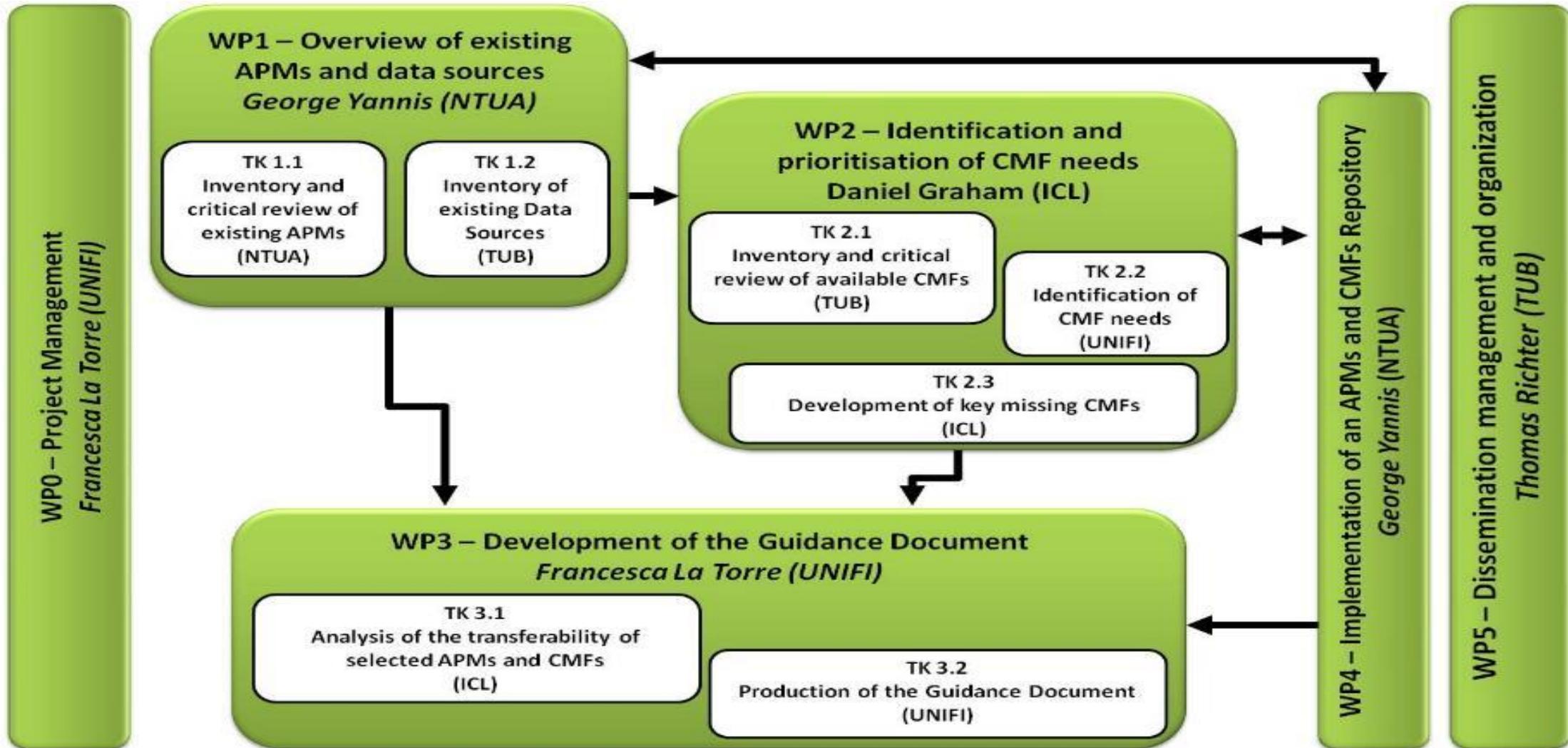
# The problem

Although high levels of data availability were reported, particularly for motorways, most National Road Administrations (NRAs) in Europe **do not systematically use quantitative methods during decision making** on road safety improvements.

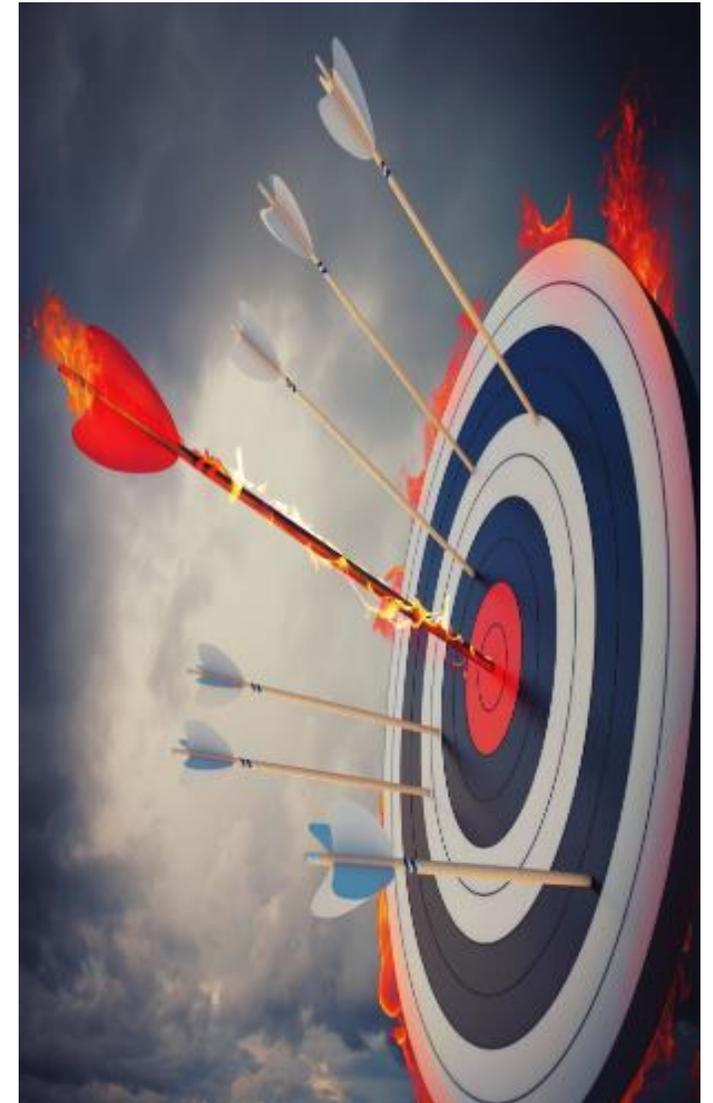


Use of APMs and CMFs for road safety measures assessment

# Methodological approach



- A **Trans-European Accident Prediction Model** has been developed with a single structure and different parameters for different countries. The model has been fitted to data from 5 Countries (Italy, UK, Greece, Netherlands, Germany).
- A **user friendly tool** has been developed to assist in the application of APMs according to data availability and local conditions.
- A procedure to **check the transferability of CMFs** has been developed and incorporated in the tool.
- A **CMF and APM Repository** has been developed and is freely available on line.



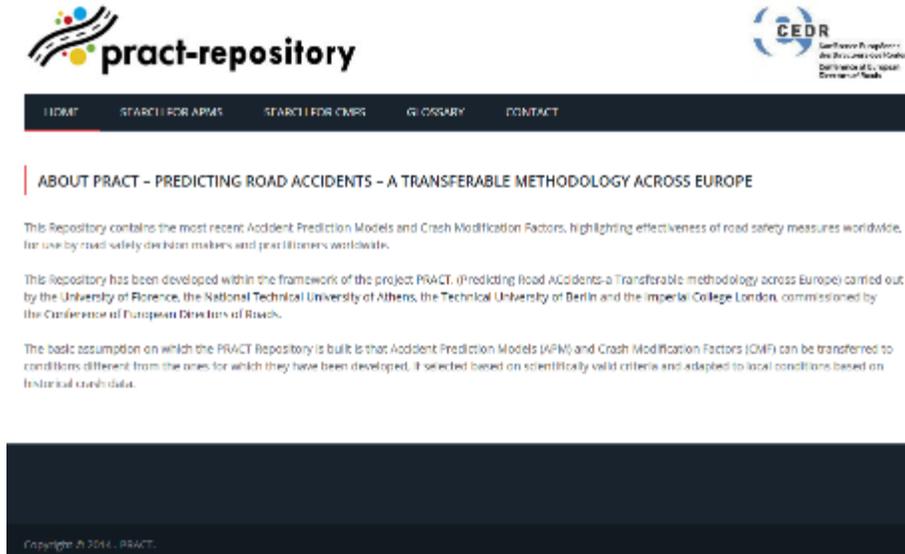
# Repository Development



- The Repository has two parts:
  - Crash Modification Functions (**CMF**) part
  - Accident Prediction Models (**APM**) part
- Both parts are based on the respective **inventories** developed within PRACT review process:
  - All reviewed APMs were included.
  - Only high quality CMFs were included, on the basis of specific criteria, examining statistical design, testing for statistical significance, and sample size.
- The **Repository** includes:
  - 146 APMs
  - 889 CMFs (1,526 examined CMFs)



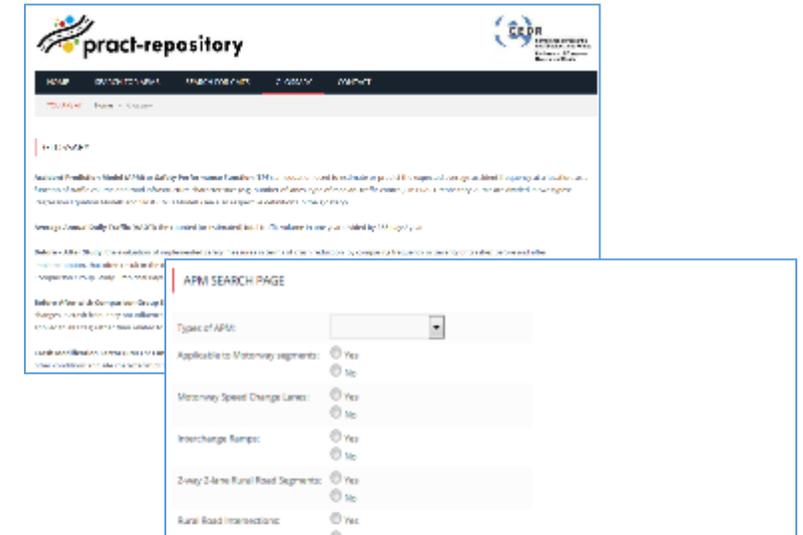
[www.pract-repository.eu](http://www.pract-repository.eu)



# Main Features of Repository

- HOME: basic information about the repository and about PRACT project,
- SEARCH FOR APMs: search the database for APMs with specific characteristics,
- SEARCH FOR CMFs: search the database for CMFs with specific characteristics,
- GLOSSARY: definitions of the most commonly used terms
- CONTACT: allows the user to send email to the partners responsible for the operation and maintenance of the website

[www.pract-repository.eu](http://www.pract-repository.eu)



ID	Road Elements	Types of APM	Equation	Road Types	Geographic Data
1-020	Intersection	Regression Equation	$Af = 9.62 \times 10^{(-11)} \times AADT^a \times AADT^c \times 0.5 \times V^2$	Two-lane two-way rural road	Queensland - Australia
1-019	Intersection	Regression Equation	$Af = 3.63 \times 10^{(-14)} \times AADT \times L \times (V + \bar{AV})^2 \times \left( \frac{V + \bar{AV}}{R^{1.5}} + 47.4 \right)$	Two-lane two-way rural road	Queensland - Australia

# Value of PRACT Repository

Compared to other existing online toolkits, PRACT Repository:

- Includes **all types of data / models** required in accident prediction (CMFs, SPFs, and Regression Equation APMs).
- Provides all available background information to verify quality and **transferability** of CMFs and APMs.
- Includes only CMFs of **verified quality**.
- Includes data also from **European studies**.
- Supplements and supports PRACT Accident Prediction **Tool & Guidelines**.



# Future challenges

- The **quantification of the impact** of various road safety measures and interventions is a valuable tool for the Decision Makers (Public Authorities and private stakeholders).
- Rigorous **scientific modelling** is critical for reliable and transferable results.
- There is need for **continuous update** of APM and CMF databases and the related Decision Support Systems.
- **National Road Administrations** should be encouraged to use Accident Prediction Models in decision making.



[www.pract-repository.eu](http://www.pract-repository.eu)



HOME SEARCH FOR APMs SEARCH FOR CMFs GLOSSARY CONTACT

## ABOUT PRACT – PREDICTING ROAD ACCIDENTS – A TRANSFERABLE METHODOLOGY ACROSS EUROPE

This Repository contains the most recent Accident Prediction Models and Crash Modification Factors, highlighting effectiveness of road safety measures worldwide, for use by road safety decision makers and practitioners worldwide.

This Repository has been developed within the framework of the project PRACT, (Predicting Road Accidents—a Transferable methodology across Europe) carried out by the University of Florence, the National Technical University of Athens, the Technical University of Berlin and the Imperial College London, commissioned by the Conference of European Directors of Roads.

The basic assumption on which the PRACT Repository is built is that Accident Prediction Models (APM) and Crash Modification Factors (CMF) can be transferred to conditions different from the ones for which they have been developed, if selected based on scientifically valid criteria and adapted to local conditions based on historical crash data.

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