PRACT
Predicting Road ACCidents - a Transferable methodology across Europe

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The consortium

With the support of:

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IRF

ERF

TRB

ANB25 Committee

Project Manager: Elizabeth Mathie, Highways England - UK

Introduction & Dissemination
The Research Team


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Project Manager: Elizabeth Mathie, Highways England - UK
Established a liason and coordination group

NCHRP 17-63 “Guidance for the Development and Application of Crash Modification Factors” Team
The PRACT project is aimed at developing a practical guideline and a user friendly tool that will allow the different road administrations to:

- adapt the basic APM function to local conditions based on historical data;
- identify the CMFs that could be relevant for the specific application;
- verify if the selected CMFs are transferable to the specific condition;
- apply the calibrated model to the specific location to be analysed.
**Workplan**

**WP1 – Overview of existing APMs and data sources**
*George Yannis (NTUA)*

- TK 1.1 Inventory and critical review of existing APMs (NTUA)
- TK 1.2 Inventory of existing Data Sources (TUB)

**WP2 – Identification and prioritisation of CMF needs**
*Daniel Graham (ICL)*

- TK 2.1 Inventory and critical review of available CMFs (TUB)
- TK 2.2 Identification of CMF needs (UNIFI)
- TK 2.3 Development of key missing CMFs (ICL)

**WP3 – Development of the Guidance Document**
*Francesca La Torre (UNIFI)*

- TK 3.1 Analysis of the transferability of selected APMs and CMFs (ICL)
- TK 3.2 Production of the Guidance Document (UNIFI)

**WP4 – Implementation of an APMs and CMFs Repository**
*George Yannis (NTUA), Thomas Richter (TUB)*

**WP5 – Dissemination management and organization**

In green the ongoing activities

In blue the completed activities
# Timetable

<table>
<thead>
<tr>
<th>WP</th>
<th>TASK</th>
<th>WP LEADER</th>
<th>TK LEADER</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP 0</td>
<td>PROJECT MANAGEMENT</td>
<td>UNIFI</td>
<td></td>
</tr>
<tr>
<td>WP 1</td>
<td>OVERVIEW OF EXISTING APMS AND DATA SOURCES</td>
<td>NTUA</td>
<td></td>
</tr>
<tr>
<td>TK 1.1</td>
<td>Inventory and critical review of existing APMs</td>
<td>NTUA</td>
<td></td>
</tr>
<tr>
<td>TK 1.2</td>
<td>Inventory of existing Data Sources</td>
<td>TUB</td>
<td></td>
</tr>
<tr>
<td>WP 2</td>
<td>IDENTIFICATION AND PRIORITISATION OF CMF NEEDS</td>
<td>ICL</td>
<td></td>
</tr>
<tr>
<td>TK 2.1</td>
<td>Inventory and critical review of available CMFs</td>
<td>TUB</td>
<td></td>
</tr>
<tr>
<td>TK 2.2</td>
<td>Identification of CMF needs</td>
<td>UNIFI</td>
<td></td>
</tr>
<tr>
<td>TK 2.3</td>
<td>Development of key missing CMFs</td>
<td>ICL</td>
<td></td>
</tr>
<tr>
<td>WP 3</td>
<td>DEVELOPMENT OF THE GUIDANCE DOCUMENT</td>
<td>UNIFI</td>
<td></td>
</tr>
<tr>
<td>TK 3.1</td>
<td>Analysis of the transferability of selected AMFs and CMFs</td>
<td>ICL</td>
<td></td>
</tr>
<tr>
<td>TK 3.2</td>
<td>Production of the Guidance Document</td>
<td>UNIFI</td>
<td></td>
</tr>
<tr>
<td>WP 4</td>
<td>IMPLEMENTATION OF AN APMS AND CMFS REPOSITORY</td>
<td>NTUA</td>
<td></td>
</tr>
<tr>
<td>WP 5</td>
<td>DISSEMINATION MANAGEMENT AND WORKSHOP ORGANIZATION</td>
<td>TUB</td>
<td></td>
</tr>
</tbody>
</table>

- **PROJECT MILESTONES**
- Progress Report to CEDR TG on Road Safety

**April 1, 2014**

**March 31, 2016**
The modeling approach

Accident Prediction Model (APM) = a full model that allows an evaluation of the predicted number of crashes in a given condition

Safety performance function (full APM)

- In the inquiry phase we investigated both and these were all collected in the web repository;
- The PRACT Model is based on the second approach.

Base APM x CMFs x C
The modeling approach

- the idea that a unique Accident Prediction Model (APM) model and unique set of Crash Modification Factors (CMFs) can actually be developed, valid for all Europe and for all the different type of networks of motorways and higher ranked rural roads, is unrealistic;

- the development of a specific APM model and a set of CMFs based on local data is extremely time consuming and expensive and requires data and experience that most road administrations do not have;

- the development of “local” CMFs only based on historical local data prevents the possibility of evaluating the effectiveness of new technologies.
The basic assumption on which the PRACT project is built is that APMs and CMFs 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 condition based on historical crash data.

- adapt the basic APM function to local conditions based on historical data;
- identify the CMFs that could be relevant for the specific application;
- verify if the selected CMFs are transferable to the specific condition;
- apply the calibrated model to the specific location to be analysed.
As far as different countries, as well as different designers within a country, have different level of expertise and different data availability, the system need to be structured with different possible application levels.

- **Very detailed data available**: Full PRACT Calibration (base APM and overall model)
- **Some data available**: Reduced PRACT Calibration procedure (only overall model)
- **No data available**: Default selection criteria (different sets)
Dissemination

2 papers submitted TRA 2016 one on PRACT as overall and one on WP1
1 paper submitted and accepted for Road Safety in Five Continents on WP2

1 abstract submitted and accepted for publication in ICE Transport Journal on WP1
1 abstract submitted and accepted for 1st European Road Infrastructure Conference
Full Journal paper on the single Work Zones CMFs submitted (others will follow)
Predicting Road ACCidents - a Transferable methodology across Europe

PRACT (Predicting Road ACCidents - a Transferable methodology across Europe) is a project funded by the National Road Authorities of Germany, Ireland, UK and Netherlands within the Conference of European Directors of Roads (CEDR) 2013 Transnational Research Programme - Safety.

The project aims at developing a European accident prediction model structure for motorways and higher ranked rural roads that could be applied to different European road networks with proper calibration. An important product of the PRACT project will be the establishment of a European Accidents Prediction Models (APMs) and Crash Modification Factors (CMFs) web repository with an open access database and guidance for their application and transferability on the European road networks.