PRACT
Predicting Road ACCidents - a Transferable methodology across Europe

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The consortium

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autostrade per l’italia
IRF
ERF
TRB ANB25 Committee

Project Manager: Elizabeth Mathie, Highways Agency - UK

Transnational research project funded by Germany, Ireland, Netherlands and UK within the 2013 CEDR Call Safety
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.
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- ★ PROJECT MILESTONES
- ⭐ Progress Report to CEDR TG on Road Safety
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 will investigate both and these will all go in the repository;
- The PRACT Model will be based on the second approach.
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 modeling approach

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 levels of expertise and different data availability, the system needs to be structured with different possible application levels.

Very detailed data available \(\rightarrow\) Full PRACT Calibration (base APM and overall model)

Some data available \(\rightarrow\) Reduced PRACT Calibration procedure (only overall model)

No data available \(\rightarrow\) Default selection criteria (different sets)
### Data availability

<table>
<thead>
<tr>
<th>Country</th>
<th>Type of network</th>
<th>km (approx)</th>
<th>Years available</th>
<th>Total number of crashes in the database (approx - average per year)</th>
<th>Type of data available</th>
<th>Geometric data available</th>
<th>Traffic data available</th>
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<td>151321 in year 2011 (data to be requested)</td>
<td>F, I, PDO</td>
<td>X</td>
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<td>2006-2012</td>
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<td>dependent on the federal state (data to be requested)</td>
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<td>F, I</td>
<td>X</td>
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<tr>
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<td>Main rural roads (national roads)</td>
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<td>1996-2011</td>
<td>1600</td>
<td>F, I</td>
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<td>2007-2012</td>
<td>1700</td>
<td>F, I, PDO</td>
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<td>F, I</td>
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<td>390000</td>
<td>2001-2010</td>
<td>200000</td>
<td>F, I, PDO</td>
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The literature review
Part A. Decision making process

Part B. Data Sources
B1. Road Design Data
B2. Road Operation Data
B3. Traffic Data
B4. Accident Data
B5. User Behaviour Data / Other Related Data

Part C. Information on CMF and road safety measures assessment

Part D. Summary of experience on road safety measures (CMFs)
Part D. Summary of experience on road safety measures (CMFs)

1. Need to implement the road safety measure in your country’s road network;

2. Availability of assessment of measure / CMF;

3. Transferability of safety effect (i.e. if the measure is assessed in a different location, will the safety effect be similar and therefore transferable to your country?).
For more info

www.practproject.eu
(in construction)

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Thank you .......