eSUM: European Safer Urban Motorcycling Project

POLIS Annual Conference

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Safety Coordinator,
ACEM

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Presentation summary

1. Context

2. Consortium & project objectives

3. Diagnosis

4. Demonstrations

5. Main deliverables
   - Good Practice Guide
   - Action Pack
   - Video
Context - Growing mobility needs, urban challenges
Continuous increase of PTW fleet pushed by urban mobility needs

PTW Fleet Evolution and Forecast

<table>
<thead>
<tr>
<th>Year</th>
<th>Units</th>
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<tbody>
<tr>
<td>1994</td>
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<tr>
<td>1996</td>
<td>5,000,000</td>
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<td>1998</td>
<td>10,000,000</td>
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<tr>
<td>2000</td>
<td>15,000,000</td>
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<tr>
<td>2002</td>
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<td>2004</td>
<td>25,000,000</td>
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<tr>
<td>2006</td>
<td>30,000,000</td>
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<tr>
<td>2008</td>
<td>35,000,000</td>
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<tr>
<td>2010</td>
<td>40,000,000</td>
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</table>

Context – increasing PTW use in respond to mobility demands
2. Consortium

- **Cities**
  - Ajuntament de Barcelona
  - Mairie de Paris
  - Transport for London
  - ATAC Roma

- **National authorities**
  - MINISTERIO DEL INTERIOR
  - DGT Dirección General de Tráfico

- **Manufacturers**
  - BMW
  - Piaggio
  - ACEM

- **Researchers**
  - Universita' Mediterranea di Reggio Calabria
  - Altran Technologies
To demonstrate that a constant reduction in Powered Two Wheeler (PTW) accidents is feasible by addressing PTW safety through an integrated approach.

The eSUM partners have been working together towards:

- Improved diagnosis
- Identification of good practices
- Realization of trials to demonstrate/further develop good practices
- Promotion and rapid uptake of good practices – application to urban PTW Action Plans.

eSUM approach:
Diagnosis -> Good Practice -> Demonstration -> Evaluation -> Transfer -> Dissemination
3. Diagnosis

- Benchmarking PTW urban accidents
- Vehicles with enhanced safety features (Piaggio MP3 hybrid and BMW C1- E electric scooters)
- In-depth analysis of PTW accidents in urban areas (MAIDS Urban Accident Report)
### 3.1. Benchmarking urban PTW accidents

<table>
<thead>
<tr>
<th>Background</th>
<th>Barcelona</th>
<th>London</th>
<th>Paris</th>
<th>Rome</th>
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<tbody>
<tr>
<td>Population</td>
<td>1,628,090</td>
<td>7,557,000</td>
<td>2,153,600</td>
<td>2,718,768</td>
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<tr>
<td>Area (SqKm)</td>
<td>101.0</td>
<td>1,579</td>
<td>105.4</td>
<td>1,285</td>
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<tr>
<td>Density</td>
<td>20,433</td>
<td>4,813</td>
<td>20,433</td>
<td>2,115</td>
</tr>
<tr>
<td>Road network length (Km)</td>
<td>1,328</td>
<td>14,926</td>
<td>1,644</td>
<td>6,100</td>
</tr>
<tr>
<td>Bus lanes (Km)</td>
<td>113.5</td>
<td>292</td>
<td>189.0</td>
<td>110</td>
</tr>
<tr>
<td>Bicycle lanes (Km)</td>
<td>140.2</td>
<td>1,343</td>
<td>399.3</td>
<td>150</td>
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<tr>
<td>Zone 30 (Km) or 20mph Zones</td>
<td>53.4</td>
<td>2,000</td>
<td>302</td>
<td>19</td>
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<tr>
<td>Number of motor vehicles</td>
<td>990,166</td>
<td>3,010,000</td>
<td>893,300</td>
<td>2,660,202</td>
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<tr>
<td>Number of collisions with casualties</td>
<td>8,942</td>
<td>23,210</td>
<td>7,463</td>
<td>19,960</td>
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<tr>
<td>Number of fatalities</td>
<td>31</td>
<td>222</td>
<td>50</td>
<td>201</td>
</tr>
<tr>
<td>Number of injured</td>
<td>11,551</td>
<td>27,949</td>
<td>8,546</td>
<td>26,299</td>
</tr>
<tr>
<td>Mortality rate (*100,000)</td>
<td>2.7</td>
<td>2.9</td>
<td>1.6</td>
<td>7.4</td>
</tr>
<tr>
<td>Fatality rate (100,000)</td>
<td>4.3</td>
<td>7.4</td>
<td>3.9</td>
<td>8.0</td>
</tr>
<tr>
<td>Death rate (*1,000)</td>
<td>4.4</td>
<td>9.6</td>
<td>4.4</td>
<td>10.1</td>
</tr>
</tbody>
</table>
### Benchmarking urban PTW accidents

<table>
<thead>
<tr>
<th>Background</th>
<th>Barcelona</th>
<th>London</th>
<th>Paris</th>
<th>Rome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of motorcycles</td>
<td>193,902</td>
<td>116,000</td>
<td>102,000</td>
<td>379,997</td>
</tr>
<tr>
<td>Number of mopeds</td>
<td>93,382</td>
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<td></td>
<td>155,842</td>
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<tr>
<td>PTW fatalities</td>
<td>21</td>
<td>50</td>
<td>14</td>
<td>85</td>
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<tr>
<td>PTW injured</td>
<td>6,753</td>
<td>4,172</td>
<td>5,038</td>
<td>10,411</td>
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<tr>
<td>% PTW of motor vehicles</td>
<td>29.0%</td>
<td>3.9%</td>
<td>11.4%</td>
<td>20.1%</td>
</tr>
<tr>
<td>% PTW fatalities of all fatalities</td>
<td>67.7%</td>
<td>24.5%</td>
<td>28.0%</td>
<td>42.3%</td>
</tr>
<tr>
<td>% PTW injured of all injured</td>
<td>58.5%</td>
<td>14.9%</td>
<td>59.0%</td>
<td>39.6%</td>
</tr>
<tr>
<td>PTW fatalities per million inhabitants</td>
<td>15.05</td>
<td>5.43</td>
<td>5.57</td>
<td>31.26</td>
</tr>
<tr>
<td>PTW fatalities per 100,000 vehicles</td>
<td>7.31</td>
<td>43.10</td>
<td>13.73</td>
<td>15.86</td>
</tr>
</tbody>
</table>
Benchmarking urban PTW accidents

P2W fatalities & stock evolution

- P2W fatalities
- P2W stock

- BCN
- London
- Paris
- Rome

Main findings – MAIDS Urban Accident Report

- A failure by the other vehicle driver – primary cause for urban accidents (perception or decision failure)

- Environmental factors - more important role in urban context

- Riders involved in urban accidents - less trained and less skilled than the total number of MAIDS riders

- Fatal and single accidents - less commuting pattern, evening and night hours, caused by a PTW rider failure.
## 4. Demonstrations

<table>
<thead>
<tr>
<th></th>
<th>Number of demonstration actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure</td>
<td>9</td>
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<tr>
<td>Enforcement</td>
<td>4</td>
</tr>
<tr>
<td>Vehicles / features</td>
<td>5</td>
</tr>
<tr>
<td>Rider training / Driver awareness</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
</tr>
</tbody>
</table>
Infrastructure: PTWs in Bus Lanes

London - opening 107 km bus lanes to PTWs
- 51% PTW switched to the bus lanes
- 33% increase of collisions on 28 survey sites where PTWs were permitted to use bus lanes
- the ‘before’ and ‘after’ figures for 28 Control sites - decrease of 50.7% for PTW collisions
- a focussed safety campaign has been undertaken (next 18 months trial).

Paris
- PTWs - not allowed to ride in bus lanes
- analysis of 189 km of bus lanes, PTW users – not expected in bus lanes - involved in two-thirds of accidents (62%).
ROME

New highly visible discs

Black spot remedial actions
Barcelona: 3 junctions in 2008:
- small increase of accidents with slight injuries
- large reduction - movements involving risk – from 29 to 8%
- ASL - introduced in 36 sites in 2009.

London demo - ASLs already installed for pedal cyclists
- investigation to resolve potential conflicts between different 2 wheeler groups
- no significant change in PTW behaviour or collision expected.
30 Zones implementation (speed limit of 30 km/h) in Barcelona

- positive effect on the accidents trend
- from +1.3% annual increase casualties to 12.2% reduction
- the average monthly PTW casualties reduced by 40.5% (five years prior to implementation)

Best Practice transfer to Barcelona (7 sites implemented) and Rome (1 site installed and evaluated, 9 more in progress).
Rider training / Driver awareness

- 900 high school students in PTW safety campaign in Rome
- Employer-based promotion of rider training programmes in London (Bike Safe) and Barcelona - hundreds of riders trained
- Dissemination of Paris Road Safety Charter
- Protective equipment for riders’ campaign
- English, French, German, Italian, Spanish, Swedish, Dutch, Greek -
Identifying Good Practice to reduce PTW casualties in urban areas

- Detailed web searches
- Research and academic institutions
- Questionnaire widely distributed
- Over 200 projects assessed
- Priority given to projects where robust monitoring data was collected
- GPG contains 120 examples
- Search facility added
- Essential part of eSUM Action Pack
- Guide to form an ongoing resource.
6 Key Areas to identify Good Practice:

- BP1 Rider training and awareness campaigns
- BP2 Highway features and policy
- BP3 Effectiveness of targeted enforcement.
- BP4 Specific remedial measures at ‘black spots’
- BP5 Improved PTW design
- BP6 Potential for ‘soft’ street furniture to reduce PTW injuries.
ACTION PACK

An easy-to-use Toolkit
- to be used independently by road safety practitioners
- to identify the actions required to analyse PTW safety issues
- to decide upon suitable safety interventions and formulation of PTW urban road safety action plan.

Video available on the project’s website
<table>
<thead>
<tr>
<th>Stage</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gather data required for analysis of PTW casualty problems. Involve stakeholders.</td>
</tr>
<tr>
<td>2</td>
<td>Analyse data</td>
</tr>
<tr>
<td>3</td>
<td>Identification of casualty issues</td>
</tr>
<tr>
<td>4</td>
<td>Develop targets and select interventions</td>
</tr>
<tr>
<td>5</td>
<td>Implementation of interventions and monitoring</td>
</tr>
<tr>
<td>6</td>
<td>Evaluation of effectiveness</td>
</tr>
</tbody>
</table>

Table 8.1 Summary of the stages involved in developing a PTW Action Pack

Available in: English, Spanish, Italian, German, French and Greek on DG MOVE website
For more information: www.esum.eu

Thank you for your attention!

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