Assessment methodologies for forward looking Integrated Pedestrian and further extension to Cyclists Safety Systems

[Grant agreement nº: 285106]

PROJECT GENERAL INTRODUCTION

Kick Off meeting [Brussels, 1st of Sept. 2011]
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Background

- Road traffic accidents are causing approximately 1.2 million fatalities per year [Source: World Health Organization: World report on road traffic injury prevention, 2004].

- In Europe (EU-27), pedestrians account for more than 19% of road fatalities. [Source: World Health Organization Global: Status report on road safety, 2009].

- Most accidents with pedestrians are caused by the driver being in-alert or misinterpretation the situation.

It is estimated that integrated pedestrian safety systems could reduce between 15 to 30% pedestrian road fatalities in Europe.
Background

“Unprotected and un-motorized road users suffer the most severe consequences in collisions with vehicles due to the limits of the human body’s tolerance to crashes at a collision speed over 30 Km/h.”

The AsPeCSS project is responding to the topic SST.2011.4.1-1: “Design of vehicle safety systems for a better protection of vulnerable road users and other under-protected and less safe user groups” and specifically the Subtopic: “Test procedures and standards for active, passive and combined systems for pedestrian and 2-wheeler safety for consumer and regulatory testing.”
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Objectives

To develop **harmonised test and assessment procedures (and related tools)** for the assessment of **integrated pedestrian safety systems**.

**Overall Rating soft landing**

- **2012 Phase**
  - Interim results
  - Test methods for pedestrians and consideration of cyclists

- **Intermediate Phase**
  - Communication through Harmonisation Platforms
  - State of the art integrated road user protection
    - Test methods for pedestrians
    - Assessment methods for balanced active and passive pedestrian

- **Enhanced Overall Rating**
  - Next Gen integrated road user protection
    - Test methods for pedestrians and consideration of cyclists
    - Assessment methods for balanced active and passive VRU protection
Objectives (Scientific and Tecnological)

- To develop harmonised test and assessment procedures (and related tools), including:
  - A methodology for balancing direct active safety benefit,
  - methods and means to adapt passive safety test conditions for scenarios with preceding pre-crash action;
  - test targets representing pedestrians

- To gain acceptance for future implementation of test and assessment tools in scientific, industrial, regulatory or consumer rating procedures by extensive evaluation and validation;

- To set the bases and prepare similar activities focusing on the test and assessment of integrated protection systems dedicated to cyclists.
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Partners

Research partners
- Applus
- IDIADA
- bast
- TNO
- TRL
- ika

Car manufacturers
- PSA PEUGEOT CITROËN
- TOYOTA
- BMW
- MINI

Suppliers
- Autolív
- BOSCH
- HUMANETICS
- TRW
- UNIRESEARCH
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**Structure and Timing**

- **WP1** deals with the development of the overall Assessment Methodology including the socio-economic aspects.
- **WP2** will develop test methods and tools for accident avoidance and mitigation.
- **WP3** will study the testing related to injury assessment.
- **WP4** Dissemination and Exploitation, including the links to the stakeholders and the other projects running in this area.

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**Background from:**
Projects: vFSS, CAMP, ASSES,
Stakeholder: EVVC working groups, EuroNCAP, ...
Industry: OEM, Suppliers

**State-of-Art systems**

**Test tools and experiences**

**Scenarios / Methodologies**

**Partners:**
BMW, TNO, IDIADA, BMW, AUTOLIV, BAST, PCA, TOY, TRW, TNO.

**T1.1** Definition of scenarios & weighting factors
**T1.2** Benefit estimation of pre-crash braking
**T1.3** Overall assessment methodology development
**T1.4** Cyclist pre-crash systems
**T1.6** Technical coordination

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**WP4 Dissemination**

**Partners:** HEG, UNK, BMW, BAST, IDIADA, TOY, TNO,
**T4.1** Dissemination tools
**T4.2** External dissemination actions
**T4.3** Monitoring exploitable results

**Platform to harmonise assessment methods and tools at research level:**
- joined meetings, Advisory Board meetings, open workshops
- workshops with external projects and stakeholder representatives

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**Stakeholder working groups:** Euro NCAP, Industry (OEM, Suppliers, ...)
Projects: vFSS, CAMP, ASSES
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**Budget**

Total budget for AsPeCSS is 3.88 M€:
- RTD 3.53 M€ (Total cost 91% / funding 85%)
- Management 116 k€ (Tot. Cost 3% / funding 5%)
- Dissemination 238 k€ (Tot. 6% / fund. 10%)

The requested EC funding is 2.37 M€.
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Management Structure

Scientific coordination of RTD activities are delegate to WP leaders.

The project Coordinator must supervise the project. The project coordinator’s most important task is to ensure completion of the work, as agreed upon with the EC: on time, within budget, and to a high quality.

General Assembly (GA) will be established for the purpose of high-level decision-making. It will be formed by one representative from each beneficiary, and will meet every 6 months.
Management Structure

The Advisory Board reinforces end-user involvement and independently ascertains that the consortium’s work is consistently of the highest quality and that the practical needs of the end-users are being served.

Executive Board (EB) consists of the Project Coordinator (chairperson), Project Manager (Secretary) and the Work package leaders. Executive Board will handle the technical day-to-day management of the project.
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## Deliverables and Milestones

### Performance/ Research Indicators

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<tr>
<th>MS</th>
<th>Exp. Date (M)</th>
<th>RESULT (MILESTONE)</th>
<th>Research Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS4 (WP1)</td>
<td>M5</td>
<td><strong>Test scenarios from field data</strong>: To be presented in 1st General Assy / Workshop</td>
<td><strong>Test scenarios</strong>: scenarios to be agreed within AsPeCSS (and other stakeholders) and reported in D1.1</td>
</tr>
<tr>
<td>MS2 (WP2)</td>
<td>M5</td>
<td><strong>Comparative survey of existing protocols</strong>: To be presented in 1st General Assy / Workshop</td>
<td><strong>Survey of protocols</strong>: a comparison of existing protocols of pre-crash testing.</td>
</tr>
<tr>
<td>MS3 (WP2)</td>
<td>M5</td>
<td>A complete <strong>set of specifications for pedestrian test target</strong></td>
<td><strong>Specifications for test target</strong>: A complete set of specifications for the test target to be to be agreed within AsPeCSS and reported in D2.3</td>
</tr>
<tr>
<td>MS5 (WP1)</td>
<td>M6</td>
<td><strong>Draft methodology for overall system assessment</strong>: To be presented in 1st General Assy / Workshop</td>
<td>Draft methodology for overall system assessment, considering <strong>Test scenarios</strong>, <strong>Survey of protocols and Specifications for test target</strong> to be agreed within AsPeCSS.</td>
</tr>
</tbody>
</table>
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<tr>
<td>MS6 (WP2)</td>
<td>M16</td>
<td>Driver and Pedestrian reaction models to be presented in 3rd General Assy</td>
<td>Driver and pedestrian models quantified and verified for testing purposes.</td>
</tr>
<tr>
<td>MS7 (WP3)</td>
<td>M19</td>
<td>Pedestrian kinematics and impact conditions, to be presented in 3rd General Assy</td>
<td>Pedestrian kinematics and impact conditions reported and agreed within AsPeCSS</td>
</tr>
<tr>
<td>MS8 (WP2)</td>
<td>M22</td>
<td>Sampling procedures defined and adapted to testing environment</td>
<td>Sampling procedures defined and adapted to testing environment</td>
</tr>
<tr>
<td>MS10 (WP3)</td>
<td>M28</td>
<td>Data to create the Injury Risk Curves, to be presented in 5th General Assy</td>
<td>Final data from WP3 to create (define) the Injury Risk Curves</td>
</tr>
<tr>
<td>MS9 (WP1)</td>
<td>M30</td>
<td>Methodology for overall system assessment, to be presented in 5th General Assy / Workshop</td>
<td>Final Methodology for overall system assessment, based in previous Draft (MS5), Driver and pedestrian reaction models (MS6), Pedestrian kinematics and impact conditions (MS7) and the Injury Risk Curves defined (MS10)</td>
</tr>
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</table>
Main goal of the AsPeCSS project is to develop harmonised test and assessment procedures for forward looking integrated pedestrian safety systems that can be used for consumer rating and regulatory purposes. As such the project is meant to stimulate wide spread introduction of these systems that have high potential to improve safety of pedestrians and, in case adequate detection technology becomes available, also for pedal cyclists.

Significant reductions in fatalities and injuries can be achieved by implementing the project findings and results in future regulators and consumer rating procedures for vehicle safety. It is well known that consumer rating programmes have a strong influence on manufacturers to build vehicles that consistently achieve high ratings, thereby ensuring introduction of new safety systems that address real world needs into vehicles. Moreover, it will raise the public awareness of the benefits of these integrated safety systems by means of easy understandable rating systems.
Contact details

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