

PISa NEWSLETTER

POWERED TWO WHEELERS INTEGRATED SAFETY

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CONSORTIUM

- Carver Engineering
www.carver-engineering.com
- Ibeo Automobile Sensor GmbH
www.ibeo-as.com
- Ludwig-Maximilians-Universität
www.uni-muenchen.de
- MALAGUTI spa
www.malaguti.com
- Paioli Meccanica
www.paioli.com
- TNO - The Netherlands Organisation for Applied Scientific Research, Science and Industry
www.tno.nl/industrie_en_techniek
- TNO - The Netherlands Organisation for Applied Scientific Research, Security and Safety
www.tno.nl/defensie_en_veiligheid
- Transport Research Lab
www.trl.co.uk
- TVS MOTOR Company Ltd.
www.tvsmotor.in
- Uniresearch
www.uniresearch.nl
- University of Firenze
www.unifi.it
- Vehicle Safety Research Centre
www.lboro.ac.uk



About PISa Project

The aim of the PISa project is to develop and implement "reliable and fail-safe" integrated safety systems for a range of Powered Two Wheelers (PTWs), which will greatly improve their performance and primary safety (handling and stability) and can be linked to secondary safety devices. PTWs are single track vehicles, meaning that the rider has a vehicle which is more difficult to control in comparison to a car, in particular when cornering or braking, and even more in emergency situations.

Kick Off and Meetings

The kick off meeting for the PISa project was held in Delft, June 6 and 7 2006. 22 Members attended this two days meeting to start with the Powered Two Wheelers Integrated Safety project.

The 6 months meeting was held in Loughborough, UK at the Vehicle Research Safety Centre of the Loughborough University. In this meeting the results of WP 2 were discussed. Furthermore, the WP 3 was kicked off presenting the plans in WP 3 for the coming period. At this meeting the new partner in this project, Carver Engineering, was introduced and appointed as WP 5 leader. Carver Engineering is an engineering company which has developed the Carver One, a three wheel motorcycle. Carver Engineering is replacing Engines Engineering which was not able to participate in this project any longer.



About Workpackage 2

The objectives of WP2 are to establish the user needs and requirements of PTW riders for the integrated safety system (ISS) that is to be determined and developed within PISa. In order to establish the requirements of the proposed system(s) several activities have been undertaken or are underway.

Existing analyses of PTW accident statistics have been reviewed in order to confirm the priority accident scenarios that should be the focus of PISa. A literature review has also been undertaken and published research and information was sought on PTW safety (including accident causation, rider behaviour, performance and characteristics, etc) and active safety developments for PTWs and other vehicle types, in order to inform the issues of relevance for the integrated safety system to be determined within PISa.

In addition, user information has been gathered in the Netherlands, Germany, the UK and Italy by structured interview/questionnaire. This information includes riders' views on such aspects as accident causation, the riding ask, safety



SIXTH FRAMEWORK PROGRAMME

and new technologies on PTWs and will further inform the choice of ISS and the HMI (human-machine interface) issues that will need to be considered.

A selection of in-depth accident cases have been reviewed in order to thoroughly understand the pre-crash, crash and post-crash circumstances in different accident scenarios. For each of these in-depth cases the functions that must be fulfilled by any ISS have been identified and an initial assessment of various potential system solutions has been made.

These in-depth cases and associated video drive-through footage will also be used later in the project in the assessment and evaluation of the systems being developed.

In April the entire Consortium will review all of the information compiled by WP2 and the issues of most importance will be prioritized. From these the most appropriate ISS features will be determined for development, demonstration and evaluation within PISa.

Next Tasks

The WP3: System Specification, started on 30th January 2007 during the 6 months meeting.

The objective of WP3 is to define the specification of the components, which form part of the integrated safety system that will be installed onto the Powered Two

Wheeler to detect dangerous situations and prevent potential accidents or to reduce accident severity. The integrated safety system includes a state observer in order to determine the dynamic state of a motorcycle in real-time during both normal driving conditions and emergency situations. The detection must occur early in the pre-crash phase so that action can be taken to avoid an accident. WP3 will consider the most relevant accident mechanisms and rider assistance functions identified in WP2 and will derive a specification for the system components with the assistance of computer modelling. Within this package an existing computer simulation will be modified to incorporate rider and muscle behaviour to allow the evaluation of accident mechanisms.

The next WP3 Technical meeting will take place in Soesterberg (The Netherlands), April 19, 2007.

The WP4: System development, will start on April 19, 2007 in Soesterberg (The Netherlands).

Based on the results of WP2 and WP3, the WP4 aims at:

- ♦ developing a driver assistance system;
- ♦ selecting suitable sensors and actuators;
- ♦ developing an appropriate warning strategy and a adequate HMI to assist the driver;
- ♦ configuring and programming an electronic control unit (ECU) in order to estimate the dynamic

state and tyre road friction for the active vehicle systems;

- ♦ studying autonomous collision mitigation and avoidance strategies.

Next Meetings

The first annual meeting, 12 months, will be held in Firenze in Italy, 23 and 24 of May. At this meeting all partners, included the Scientific officer Mrs. Christina Marolda, will be present.

LINKS

PISA - Powered Two Wheelers Integrated Safety
<http://www.pisa-project.eu>

CORDIS - Community Research and Development Information Service
<http://cordis.europa.eu>

ERTRAC - European Road Transport Research Advisory Council
<http://www.ertrac.org>

APSN - Advanced Passive Safety Network
www.passivesafety.com

APROSYS - Integrated Project on Advanced Protection Systems
www.aprosys.com

EARPA - European Automotive Research Partners Association
www.earpa.org

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