

PISa project

POWERED TWO WHEELERS INTEGRATED SAFETY

FACTS & FIGURES

Currently, almost 40,000 persons are killed every year on EU roads. About 6,500 of them are drivers and passengers of Powered Two Wheelers (i.e. motorcycles, mopeds). Motorcycle or moped travel carries a risk of death per kilometre travelled 20 times higher than for car travel.

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

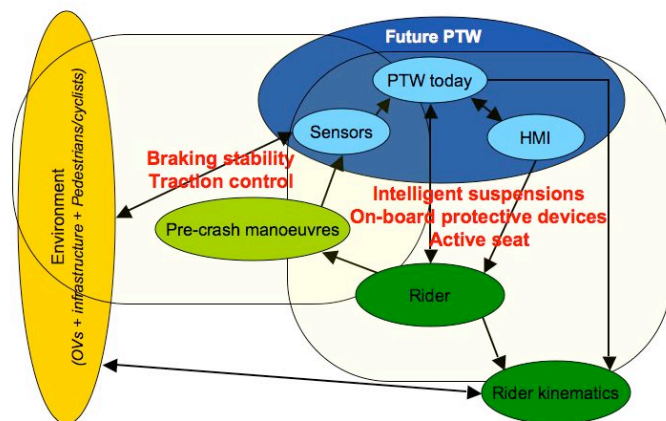


About PISa

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 vehi-



Within the project PTWs will be fitted with integrated safety systems to demonstrate the potential of such systems to

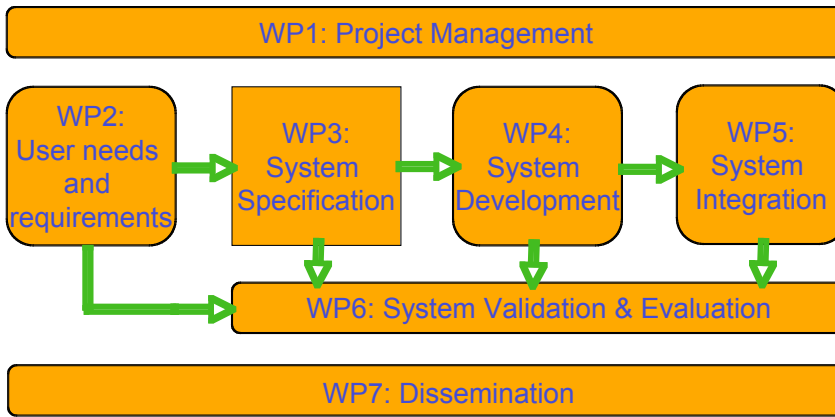


cles, meaning that the rider has a vehicle which is more difficult to control in comparison to a car, in particular when cornering or braking, and even more in emergency situations. Only a few (high-end) motorcycle brands are fitted with ABS and (partly) combined braking systems. Optimization of the PTW brake performance will reduce the impact speed in case an accident cannot be avoided and this will directly reduce the fatality rate and injury level.

reduce the incidence and severity of up to 50% of PTW accidents. The specification of components of such safety systems will be defined from identified relevant accident mechanisms and rider assistance functions and from identification of existing technologies and safety systems in cars. The systems will take human reaction to information, warning and support systems into account.



SIXTH FRAMEWORK PROGRAMME



The system components include sensors, a PTW state estimator, logic control, warning devices, and advanced/intelligent actuators within brakes and suspensions elements to assist the rider. Specific sensors and actuators will be developed and integrated into an operational safety system for PTW's to allow for driver warning and assistance and to improve handling and stability, being innovative and beyond current state-of-the-art. The developed systems will be implemented in PTWs and evaluated by executing road and track tests and performing simulations. The cost savings in terms of reduction in accidents and injuries will be related to the costs of fitting the integrated safety systems to PTWs.

Main objectives and mission

PISa will contribute to the general EU target of 50% reduction in road accident fatalities. Also for PTW fatalities a reduction of at least 50% should be the target. PISa will also contribute to India's automotive policy by enhancing the safety on PTW designs.

The quantified objectives for the integrated systems are to combine sensors and an advanced braking and suspension system to:

- ♦ avoid 50% of accidents when a collision is not unavoidable;
- ♦ reduce the impact speed, and hence reduce the injury severity by one MAIS integer for 50% of accidents when a

collision is not unavoidable;
♦ prevent 50% of the single vehicle accidents due to loss of control.

The PISa project will assess the objectives in controlled tests to replicate the relevant accident mechanisms.

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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