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## PISA

### Powered Two Wheeler Integrated Safety

Project details	
Domain	Vehicle Technology: Active Safety
Duration	from 1/06/2006 until 30/11/2009
Website	<a href="http://www.pisa-project.eu/">http://www.pisa-project.eu/</a>
Other sources	

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, which will greatly improve the performance and primary safety (handling and stability) and can link to secondary safety devices. PTW's are single track vehicles, which means that the rider has a more difficult vehicle to control in relation to a car, in particular when cornering or braking, and even more so in emergency situations. Only a few (high-end) motorcycle brands are fitted with ABS and (partly) combined braking systems.

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

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, to be 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.

#### Coordinator

- [TNO - Organisation for Applied Scientific Research](#) (NL)

## Partners

- [Carver Engineering](#) (NL)
- [TVS MOTOR Company Ltd.](#) (IN)
- [MALAGUTI Spa](#) (IT)
- [Paioli Meccanica](#) (IT)
- [TRL - Transport Research Laboratory](#) (UK)
- [Ludwig-Maximilians-Universität München](#) (DE)
- [Loughborough University](#) (UK)
- [University of Florence](#) (IT)
- [Ibeo Automobile Sensor GmbH](#) (DE)
- [Uniresearch](#) (NL)