

SAFERIDER

Advanced telematics for enhancing the safety and comfort of motorcycle riders

SAFERIDER aims to study the potential of ARAS (Advanced Rider Assistance Systems)/OBIS (On-Bike Information Systems) integration on motorcycles for the most crucial functionalities and develop efficient and rider-friendly interfaces and interaction elements for riders' comfort and safety.



At a Glance

Project:

SAFERIDER, FP7-216355

Advanced telematics for enhancing the safety and comfort of motorcycle riders

Project type:

Specific targeted research project

Programme: 7th Framework-Programme

Project coordinator :

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Partners:

CERTH/HIT (Greece), UNIMORE (Italy), INRETS (France), MIRA (UK), BAST (Germany), FHG/LAO (Germany), Conncept Swiss (Switzerland), FEMA (Belgium), PERCRO (Italy), PIAGGIO (Italy), UNIPD (Italy), CIDAUT (Spain), Metasystem (Italy), AvMap (Italy), UNIFI (Italy), IBEO (Germany), Yamaha (Netherlands), NZI (Spain), ERT (France), UNITN (Italy), Porsche Engineering (Germany)

Start Date: 01/01/2008

Duration: 36 months

Total cost: 5,4 m€

EU-funding: 3,5 m€

Project website:

www.saferider-eu.org

Project Overview

Riders' fatalities account for 17,8% of the total number of road accident fatalities in Europe and, in 2006, compared to a passenger car, a motorcycle was thirteen times more likely to be involved in a fatal accident for every kilometre travelled.

Over the last decade, Advanced Driver Assistance Systems (ADAS) and In-Vehicle Information Systems (IVIS) development has been one of the main research areas of the automotive industry, aiming to increase safety and comfort of four-wheel vehicles. Some of these new technologies have already been introduced into the automotive market and their evolution is fast and efficient.

In contrast, the application of such technologies in motorcycles with the aim of increasing the safety and comfort of riders, who form an extremely vulnerable road user group, is today lacking behind.

If applied to motorbikes, such technologies should be designed in a way that will not interfere with the riding task. Motorcycles are very sensitive vehicles and any unexpected change when travelling can lead to loss of control and, most probably, an accident.

SAFERIDER was launched in January 2008 and is expected to conclude end of 2010. It studies the potential of ARAS (Advanced Rider Assistance Systems)/OBIS (On-Bike Information Systems) integration with Powered Two-Wheelers (PTWs) for the most crucial functionalities. It also develops efficient and rider-friendly interfaces and inter-

action elements to enhance riders' comfort and safety.

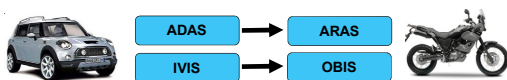
Project Objectives

SAFERIDER's key objectives include:

- To develop priority Use Cases for ARAS/OBIS integration with PTWs.
- To define the functionalities of the prioritised ARAS/OBIS for PTWs of different levels (small, medium, high), based on accident analysis data and naturalistic riding studies.
- To design and develop ARAS/OBIS prototypes for the selected functionalities.
- To design an optimal HMI concept and develop warning/ information provision elements for the developed ARAS/OBIS prototypes. The project also looked into potential combinations of the output of the warning and information elements.
- To technically verify the developed ARAS/OBIS and integrate them with PTW simulators and vehicles.
- To estimate the safety impact and user acceptance of the prototypes in a series of pilot applications.
- To develop a Design Guidelines handbook for ARAS/OBIS integration with and HMI design for motorcycles.
- To develop training tools for riders for optimal ARAS/OBIS usage.

Main Activities

SAFERIDER adapts and develops 9 ARAS/OBIS functionalities for PTW's and developed the appropriate HMI for them.



Specifically, it has developed:

- **ARAS functions:** Speed alert, Curve warning, Frontal collision warning, Lane change support, Intersection support.
- **OBIS functions:** eCall, Navigation & Route Guidance, Teliagnostics, Weather, traffic & black spot warnings.

The HMI development plan is based on a common and unified concept, utilising visual, acoustic and haptic elements. The most promising element combinations for each ARAS/OBIS functionality, have been selected and integrated.

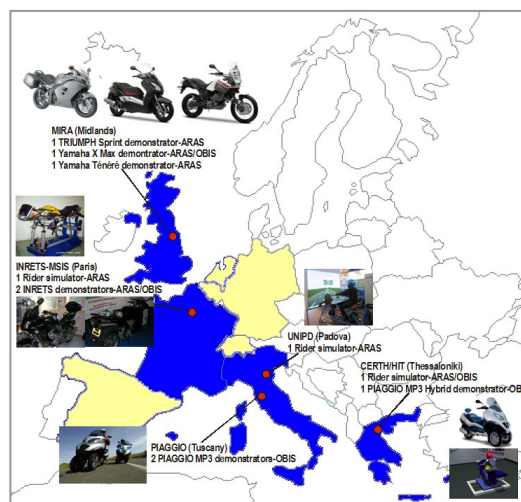
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Demonstrators and Pilot Sites

The SAFERIDER functions are being integrated and tested across Europe, off-road and on-road, in 3 riding simulators and 8 demonstrator motorcycles in order to evaluate their reliability, effectiveness, usability and user acceptance in different environmental and riding behaviour conditions. They cover various motorcycle types, even hybrid, in order to prove the applicability of the project developments to small, medium and large motorcycles.

SAFERIDER Pilot sites are situated in different geographic areas thus covering various road types, weather conditions and the rider cultures of the North (UK), Centre (France), and South (Italy, Greece) of Europe, as illustrated below.



The Pilot sites are supported by two of the biggest PTW manufacturers (PIAGGIO and YAMAHA), one large supplier of automotive systems (MIRA), two Research Centres (CERTH/HIT, INRETS) and a University (UNIPD).

