



A1.3 Benchmarking database & Ergonomic inspection



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- White paper « European Transport Policy for 2010: time to decide », 50% reduction in road fatalities by 2010



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Information & Communication Technology: a potential worsening of road safety



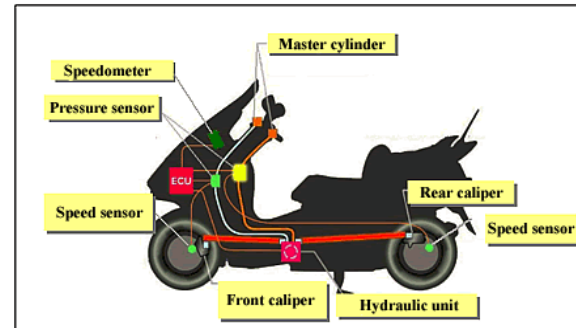
Use of information and communication systems, especially functions not related to the task, increased **workload** and **distraction**





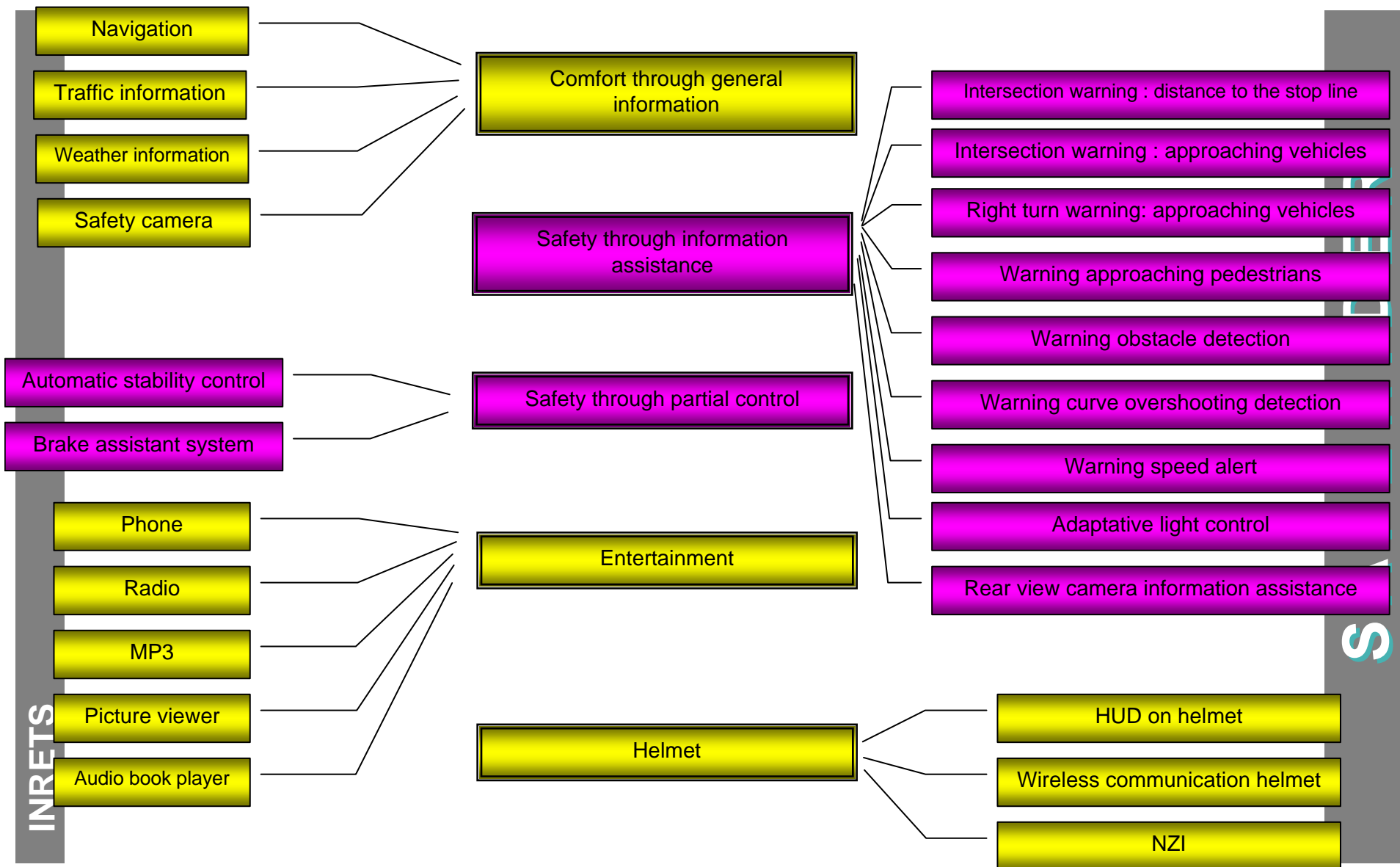
State-of-the-art analysis of existing and under development Power Two Wheels systems

■ Objectives



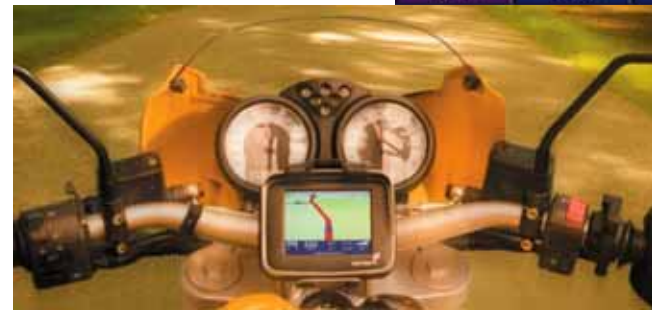
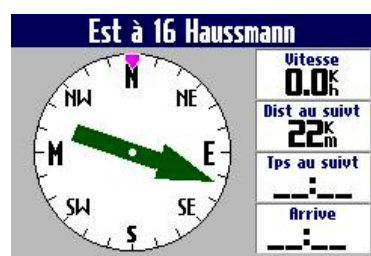
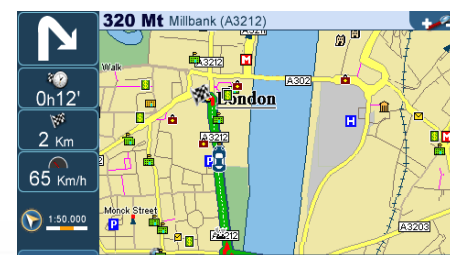
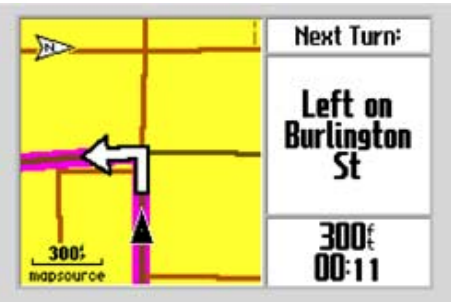
- To have an overview of available or under prototyping functions of PTW's systems, in order to be able to evaluate the diversity and the characteristics of ergonomic design concerning existing functions and HMI.
- To develop a benchmarking database giving detailed information on each function, system by system, according to functionality, technical characteristics, producer, HMI elements used,..., including description and photos
- To make this benchmarking database available for the project partners and for any interested stakeholders

Database CD Rom



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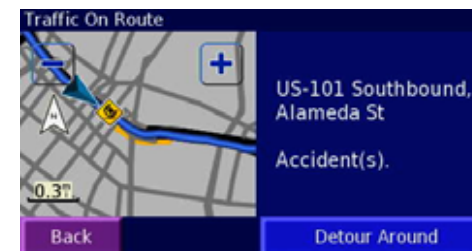
Navigation information



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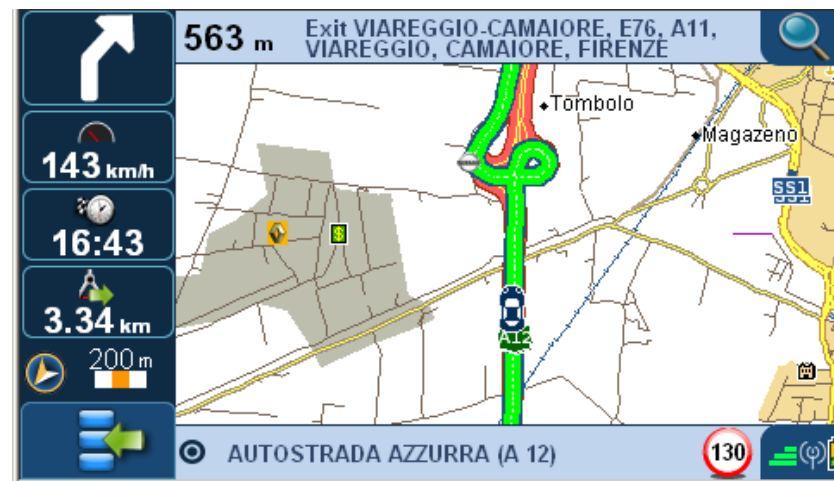
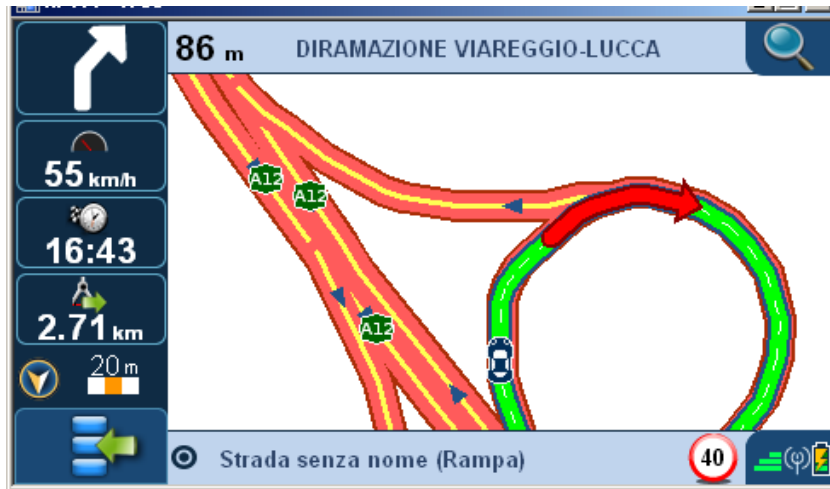
Traffic information



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Speed limit



Safety Camera



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Weather information



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TomTom Weather Service 9:14pm

Overcast, moderate rain, lightning.

23°C / 73°F

Humidity 28%
Visibility 450m
Source (c)KNMI

11 Bft / 110 m/s

Relative to:
Spuistraat 114, Amsterdam [Done](#)

Current Conditions For Seattle

46° / 39°
Precip: 65%

Cloudy

46° Feels Like: 45° Humidity: 79%

Wind: SE at 5mph Pressure: 30.10in

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Forecast For Los Angeles, XM Antenna

Tonight	Tomorrow	Wednesday
Low: 58°F Precip: 10%	High: 69°F Low: 55°F Precip: 10%	Sunny High: 78°F Low: 55°F

[Back](#) [Current Conditions](#)

Smyrna Today

86° / 63°
Precip 10%

Partly Cloud

Temp 82° Humidity 38%

Wind S 8 mph Pressure 30.00 in.

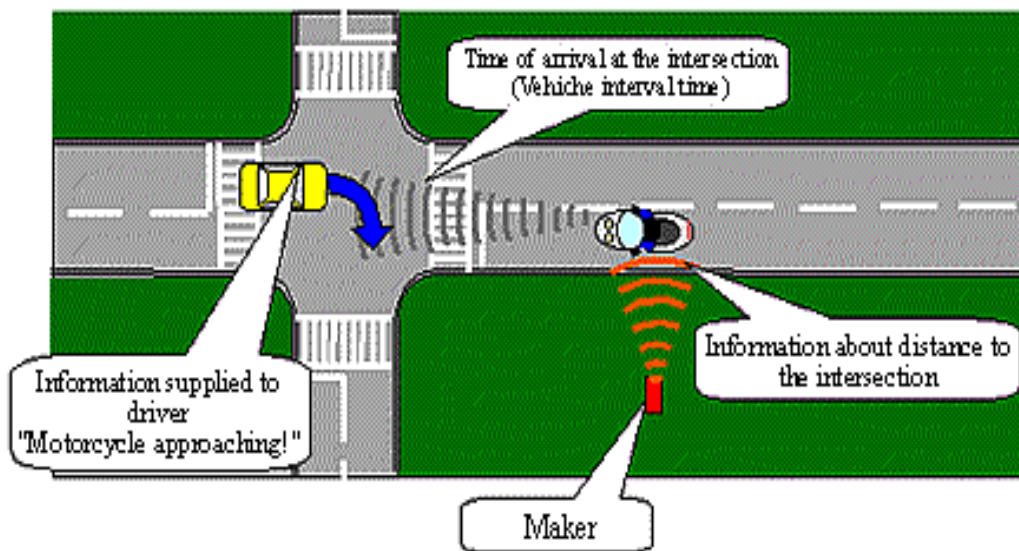
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Black spot Warning: information about critical areas with several previous crashes



Intersection Warning



Collision Warning

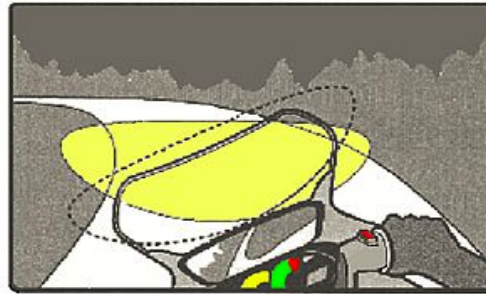
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Adaptative light control

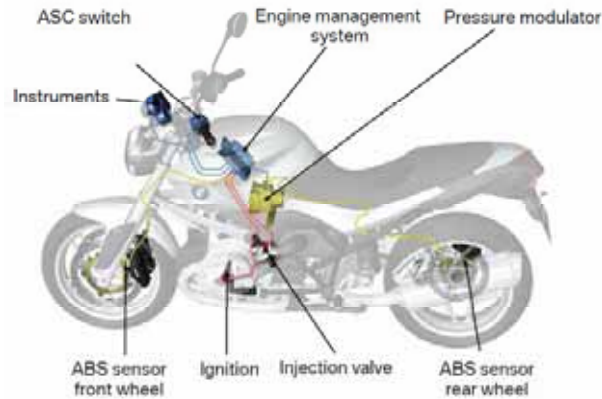
active headlight action image (for reference car)



Rear view camera warning



Safety through integrated features



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Ergonomic inspection of selected PTW's relevant systems

■ Objectives

- To identify best practice in terms of design based upon ergonomic inspection of relevant selected systems.
- To develop a methodology allowing ergonomic inspection of PTW's systems, functions and HMI.

■ Method

- To select systems for PTW, on the market and prototype
- To develop a methodology covering a set of specified criteria and scale, based upon classical ergonomic design (checklists and display design principles, code of practice) in order to evaluate usability and safety of the systems.
- To conduct ergonomic inspection of these systems using this methodology
- To use this methodology for evaluation later on in the SAFERIDER project



- Type of function IVIS

Example of **guidance** systems displaying instructions to support orientation process of the rider





- **Ergonomic inspection for IVIS**

Revised version of the Grid set up according to TRL checklist

N _i	Question	Yes	No	Not suitable	Rationale and comments
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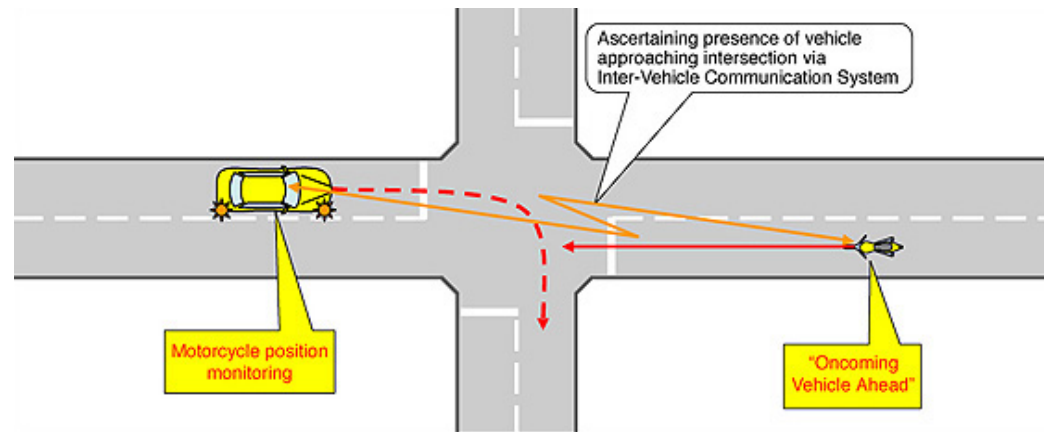
Is the support of the system securely fixed?

- **IVIS PACKAGING, INFORMATION AND INSTRUCTIONS**
- **MODALITY OF INSTALLATION**
- **LOCATION OF INSTALLATION**
- **RIDER INPUT CONTROLS**
- **AUDITORY PROPERTIES**
- **VISUAL PROPERTIES OF THE DISPLAY AND DISPLAY SCREEN**
- **DIALOGUE : VISUAL INFORMATION REPRESENTATION**
- **INFORMATION COMPREHENSION**
- **MENU FACILITIES**
- **TEMPORAL INFORMATION**
- **SAFETY-RELATED ASPECTS OF INFORMATION**



- Type of function ADAS

Example of **Oncoming Vehicle Information Assistance System**



Example of **Rear View Assistance System**





■ Ergonomic inspection for ADAS

Revised version of the Grid set up according to Code of Practice Response 3

N _i	Question	Yes	No	Not suitable	Rationale and comments
<i>Predictability</i>					
1	Does the rider get a clear understanding of the different system modes / system states ?				

- PREDICTABILITY
- TRUST
- PERCEPTIBILITY
- VIGILANCE
- WORKLOAD / FATIGUE
- TRAFFIC SAFETY / RISK
- RESPONSIBILITY / LIABILITY
- LEARNABILITY
- BEHAVIOURAL CHANGES
- COMPREHENSIBILITY
- ERROR ROBUSTNESS
- MISUSE POTENTIAL
- MACROSCOPIC EFFECTS, DRIVING EFFICIENCY AND ECONOMY
- BENEFITS / ACCEPTANCE
- OPERABILITY
- CONTROL ISSUES



Intelligent Vehicles and Mobility Services
SEVENTH FRAMEWORK PROGRAMME

SAFERIDER Project
Advanced telematics for enhancing the Safety and comfort of motorcycle Riders
Benchmarking database

- Safety through partial control
- Comfort through general information
- Safety through information assistance
- Entertainment
- Safety through teleservices
- Helmet
- Safety through integrated features
- Sensors
- Bibliography

 Création Annie Pauzié & Laure Guillot
Développement Bruno Guillaume
2008