Technology Center
for automated driving and connected vehicles
Expertise
Approval testing

Checking of the speed limit and warning

R79 - ACSF A: Auto-parking

Checking of the maximum lateral acceleration of ACSF intervention

R79 - ACSF B1: Maximum Lateral Acceleration

Speed could be reach with speed limiter system or accelerator robot

R79 - ACSF B1: Lane Keeping Functional

Unintentional / intentional lateral maneuver type A (I, II, III) and type B

R79: Emergency Steering Function

Data: 27 / 06 / 2018
UTC Time: 16:56:10.00
Speed: 73.90 km/h
Longitudinal acceleration: +0.87 m/s²
Lateral acceleration: +0.86 m/s²

Data: 08 / 05 / 2019
UTC Time: 15:36:46.00
Speed: 117.12 km/h
Longitudinal acceleration: +0.23 m/s²
Lateral acceleration: +0.89 m/s²
Force: 0.00 kN

UTAC CERAM

ISO 17025 Laboratory
When ACSF maintains the vehicle in lane, release the steering wheel until the ACSF deactivation.

The lane markings depend on the scenario.

Warning and actuation test with a stationary car with different overlap.

Laden and unladen test with a moving car.
HMI & Driver Monitoring

- A dual control vehicle is available.
- The participant must drive and perform different distracting tasks.
- A co-pilot on the passenger side takes over if necessary.
- Malfunctions are generated by an Ergonomist placed in Rank 2.

Automatic Lane Keeping Systems (ALKS)

- Highway Traffic Jam scenario
Minimum Risk Maneuver (MRM)

- Driver not available
**Expertise**

*Tests under construction*

**AEB - C2C Junction and Crossing**

**AEB - VRU**

**Cut-in scenario**

**Cut-out scenario**

**Presentation**

**Expertise**

**Achievements**

**Conclusion & key points**
Expertise
Tests under construction

- Urban Traffic Jam
- Blind Spot
- Autonomous Urban Shuttle
- Crossing Stationary Car

ISO 17025 Laboratory
**Expertise**

**Connectivity testing**

**V2V : intersection crossing**
*City area*

**V2N : crash warning / toll warning**
*Highway circuit (toll zone)*

**V2V : hidden straight oncoming**
*ADAS dynamic platform*

---

**In collaboration with**

- **CAM + Jamming**
  - 25 units

- **V2X emulation platform**
  - Remote & multi-parameter control
  - Logs storage analyses

---

**ISO 17025 Laboratory**

**CAM + Jamming**

**V2X emulation platform**

---

**Presentation** | **Expertise** | **Achievements** | **Conclusion & key points**
AV simulation

Virtual testing

- Physical testing experience implemented into simulation UTAC CERAM 3D track
- Help customer to focus on his physical test plan
- Full UTAC CERAM test track scanned in HD
- Euro NCAP digital scenarios
- Correlation method between simulation/physical test
- Expertise and building of the future AD regulation
- Audit and digital type approval
**Expertise**

**Research**

---

**AD capability to manage several parameters during an AEB C2C**
- Multi-target: Car and VRU

**Suddenly difficult perception**
- Caused by tunnels

---

**AD capability to manage aggressive entering vehicles**
- 2 scenarios: entering has priority or not

**Useful scenarios**
- Priority vehicles

---

**WORK IN PROGRESS**

ISO 17025 Laboratory
MUSE: Motorbike Users Safety Enhancement

European project to act against the high level of motorcyclist deaths.

Objectives

- The development of protocols of test and assessment
- The evaluation of the most suitable ADAS systems to avoid this kind of accidents

Methodology

1. Accident Data Study
2. Target characterization and development
3. Propulsion system development
4. Test and assessment protocols definition
5. Study of the possible technical solutions

PARTNERS

- Autoliv
- BMW
- FCA
- Volkswagen
- HONDA
- Ssangyong
- Valeo
- Renault
- Thatcham Research
- bast
- CSI
- OESPI
- SWOV
- 4Q
- Dynamics
BRAVE : Bridging gaps for the adoption of Automated Vehicles

Project description

- European research project on AD
- Timeline: June 2017 – June 2020
- Market study, design, simulation, prototyping, testing and open roads validation of one vehicle prototype with innovative HMI & ADAS
- This vehicle is able to read, anticipate, understand and manage driver, pedestrian intentions and movements (head, members,...)
A common project between UTAC CERAM and Fondation MAIF to conduct consumerist tests on SAE Level 2 vehicles

Objective
- Access and highlight the benefits and the limits of SAE Level 2 vehicles

Methodology
- Evaluation of 4 vehicles on open roads of the main characteristics of automated driving, functional study, accentological research on risk scenarios
- Development of objective test methods for several critical scenarios of 2 closed-circuit vehicles
- Declination and deepening of the most relevant methods on 4 vehicles on circuit and final assessment
- 935 tests; 1,500 videos; 2.5To of data

Main conclusions
- Necessity to maintain the driver’s vigilance
- Prevent overconfidence in the systems
- Vigilant manual driving is still safer than automated driving
- Repeatability of the systems could be improved
- Perfectible HMI systems
- **ADAS systems are very useful in case of a lack of intention from the driver**
Conclusion & key points

in the service of safety

Facilities

New test tracks
Associated laboratories
Testing equipment
5G, ITS-G5, WiFi connectivity
Simulation software
Engineers & Technicians

Presentation  |  Expertise  |  Achievements  |  Conclusion & key points
At the heart of innovation to fill your future expectations!