

Project SI²M

Simulation Interaction & HMI

Partners: Oktal, Renault, Techviz, Axtrid, Arts & Métier, Armines

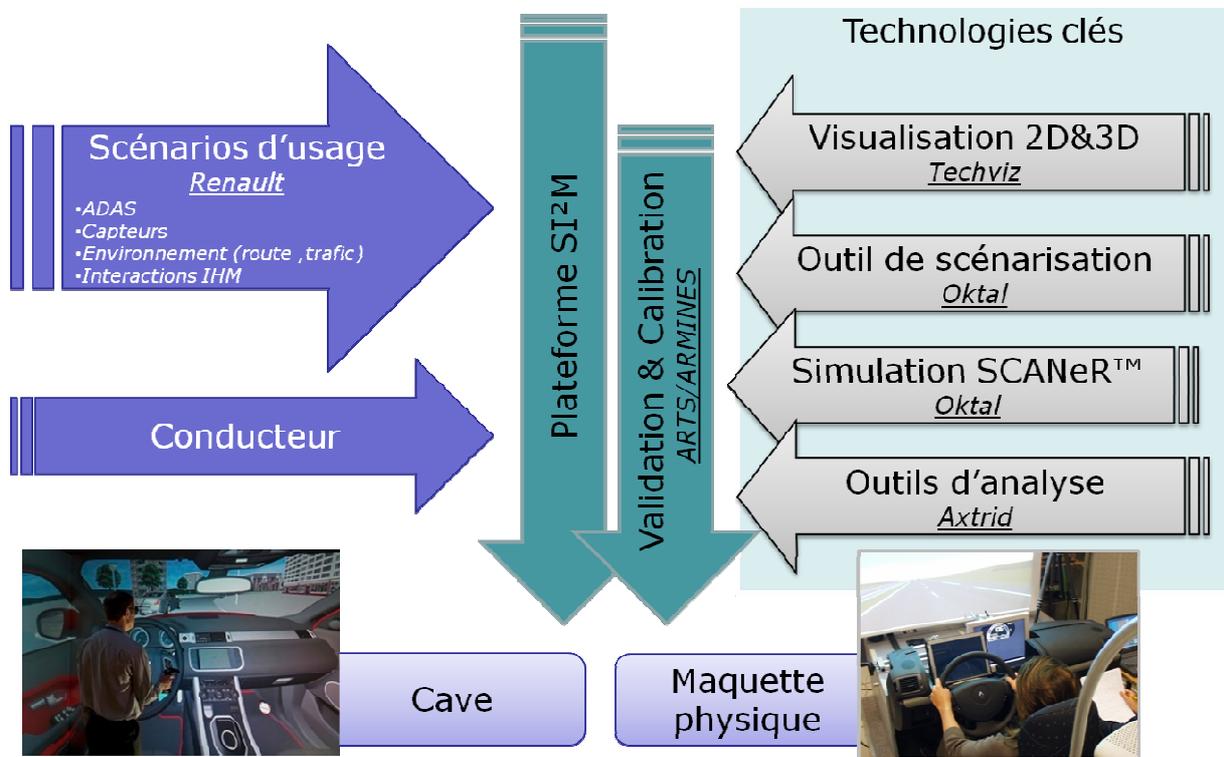
Project Summary:

To meet the challenges of road safety and the different standards in the transport field, automakers team equip increasingly vehicles with advanced driving assistance systems (ADAS) like cruise control or "start & stop" systems. Future generations of ADAS will contain more computers, linked to advanced sensors such as accelerometers, gyroscopes and cameras, controlling, and correcting in real time the vehicle path according to its own dynamics, driver behavior or even the surrounding traffic. Therefore, the optimization of the interactions and interfaces between the driver and the ADAS appears increasingly as a major challenge for automotive engineering teams. In their common approaches, these teams rely mostly on test benches dedicated to a given ADAS system or ADAS category. The interaction between the driver and all these systems is developed later, on equipped prototype vehicles. The design-validation pattern becomes binding because the necessary changes identified from the tests on track require setting systems again on the dedicated benches.

SI²M project aims to develop methods and software platform to help the prototyping, interfaces evaluation and interactions between the driver and embedded systems in the early phases of design. The project focuses particularly on the ADAS.

Coupled with an advanced and interactive driving simulation, user submitted to the mental load of driving simulation interacts with realistic and representative simulated edges equipment. ADAS HMI systems, whether graphic, haptic or audio, have a logic operation identical to the real system. Indeed, the final ADAS is directly embedded in the driving simulation and approached by the advanced vehicle dynamic model as well as a complex environment.

The platform will allow for cross-validation tests. This is implementing several systems simultaneously, as soon as possible in the development cycle. It will also validate the interactions between humans/systems in driving situation to identify early the best compromise for the driver. Interfacing the platform with CAD prototyping tools and IHM design tools exploring real time links , witch do not require conversion, can shorten the delay between project reviews



SI²M platform and related technologies

Locks :

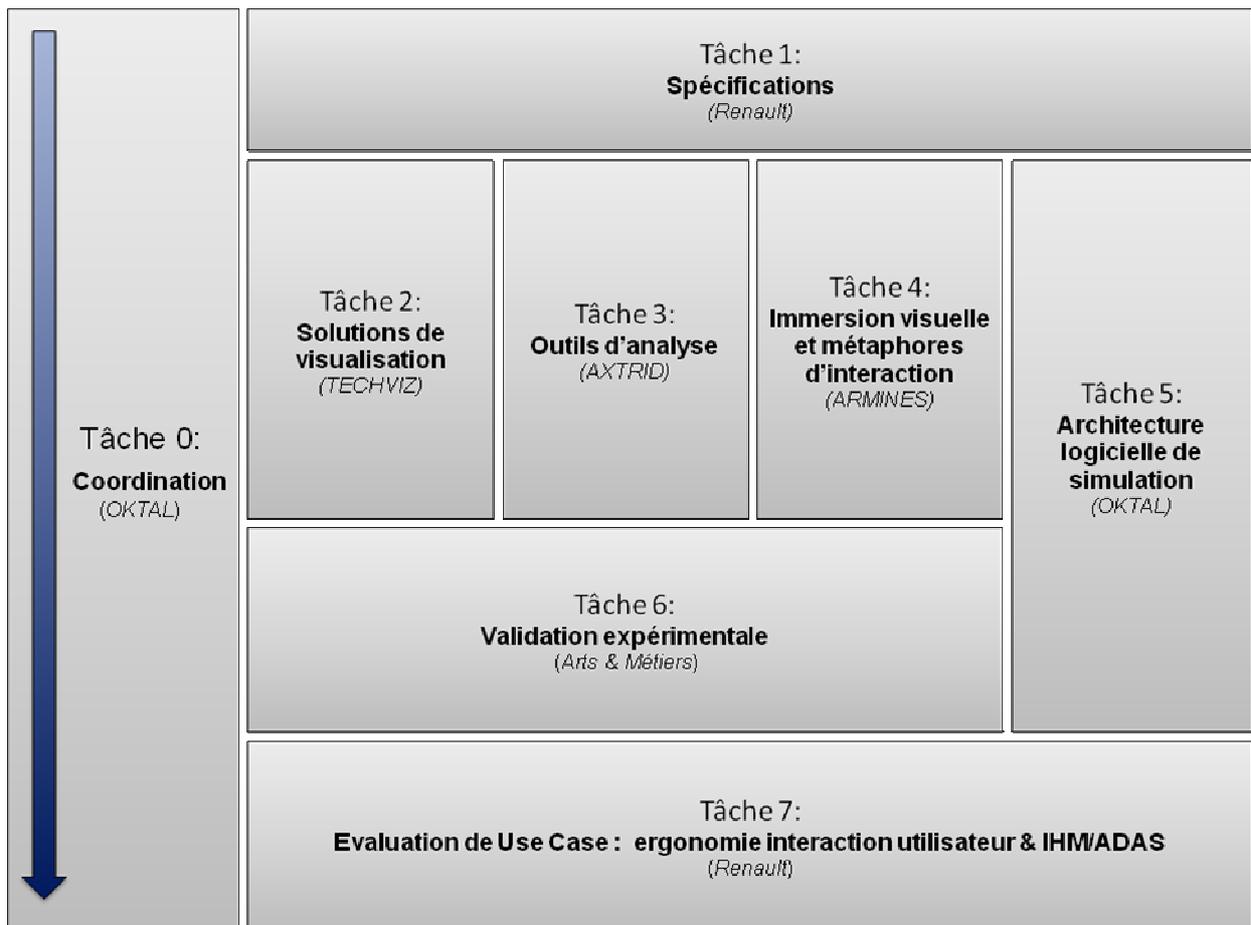
Technical locks:

- Interactions & ADAS HMI
- Tool for creating simplified scenario
- CAD Visualization and HMI
- High performance visual immersion

Scientific locks:

- Decrease of simulator sickness
- The specifications in task 1 will lead to define scientific and technological locks that will be studied in the task 6 in conjunction with other tasks.

Work packages:



Project consortium:



Project certified by the poles



Project funding:

Expected Duration: 36 months
Call for proposals: FUI 2014
Label: Systematic, MOVEO