

SAM PROJECT

French automated mobility team



Coordinator



**PRESSE
KIT**



The government has chosen the SAM consortium gathered around the French Automotive Platform (PFA) to launch a large-scale experiment programme for automated vehicles and make France a land of development, implementation and deployment of automated driving and mobility

more than **100 M€**, nearly **50 VEHICLES**, **11 TERRITORIES**

18 PARTNERS

Alstom
Cerema
Cofiroute
EasyMile
ENPC/LVMT
Groupe Renault
IFP Energies Nouvelles
Keolis
Le LAB
PFA
RATP
SNCF
Stellantis
SystemX
Transdev
TwinswHeel
Valeo
VEDECOM

11 TERRITORIES

Châteauroux
Créteil (private parking)
Ile-de-France
Les Mureaux, Ariane Espace
Montpellier
Nantes Carquefou
Paris
Paris-Saclay
Rennes
Toulouse
Vincennes

SAM is a national project for large-scale experiments in automated driving and mobility on open roads. The challenge is twofold:

- to develop the use and knowledge of these systems by citizens and local stakeholders
- to build the future regulatory framework, particularly in terms of safety validation by 2023.

The project is based on a common methodological approach and targets three application areas: individual mobility, shared or collective mobility and logistics. A large panel of users will test nearly 50 automated vehicles in 11 French territories over a period of 4 years.



Towards a national framework for the deployment of marketable automated mobility services by 2023

In January 2018, Bruno LE MAIRE, Minister of the Economy and Finance, and Philippe VARIN, Vice President of the National Industry Council (CNI), entrusted Luc CHATEL, President of the Strategic Committee of the Automotive Industry and of the French Automotive Platform (PFA) with a mission "*aimed at accelerating the development of automated vehicles*". In particular, in close coordination with Anne-Marie IDRAC, the senior official in charge of the national strategy for the development of automated vehicles, the task was to propose an ambitious programme of experiments.

This mission is based on the "France Véhicules Autonomes" (FVA) programme, which brings together French industry and academia to meet the challenges linked to the deployment of automated mobility: safety demonstration, meeting local and regional mobility needs, reducing emissions, acceptance, and the regulatory and legal framework.



Industry and academia with the local authorities to set up the elements for large-scale deployment (regulation, technology, acceptance, safety)

In June 2018, ADEME launched the EVRA (Automated Road Vehicle Experiment) Call for Projects as part of the Future Investment Programme (PIA), which is at the heart of the national automated vehicle development strategy presented by the Government in May 2018.

Its objective is to contribute to the development of safety validation methodologies, to the improvement of knowledge on uses, acceptance and societal impacts.

In response to this call for projects, a consortium coordinated by the PFA has come together to create the SAM (Safety and Acceptance of Automated Driving and Mobility) project. It gathers industrial players (manufacturers, transport operators, systems and equipment manufacturers, infrastructure managers) and academia, together with local authorities.

11 industrial players for the implementation of the experiments: Alstom, Cofiroute, EasyMile, Keolis, Stellantis, RATP Group, Renault Group, SNCF, Transdev, TwinswHeel, Valeo

6 partners for the methodology and evaluations: Cerema, ENPC/LVMT, IFP Energies Nouvelles, Le LAB, SystemX, VEDECOR.

Coordinator



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On 24 April 2019, the call for projects "Automated Road Vehicle Experiment" (EVRA) selected the SAM project as well as the project "Automated Shuttle Experiments" (ENA) led by the French Institute of Science and Technology for Transport, Development and Networks (IFSTTAR, now UGE).

SAM project was officially launched on the 20th of June 2019.

The SAM project has a consolidated budget of more than €100 million, of which €35 million is provided by the State. The local authorities are contributing to the investment in infrastructure.












"We are proud of the success of the Consortium SAM which has been formed around the PFA, with the aim of bringing together the French automated mobility team," said delighted Luc CHATEL. "The objective is to finally make it possible for national and international standards to emerge."



Diverse experiments to explore all types of use cases




The project targets six categories of automated vehicle use cases: automated driving, parking valet, ride hailing, new collective or shared mobility services, public transport and last-mile delivery.

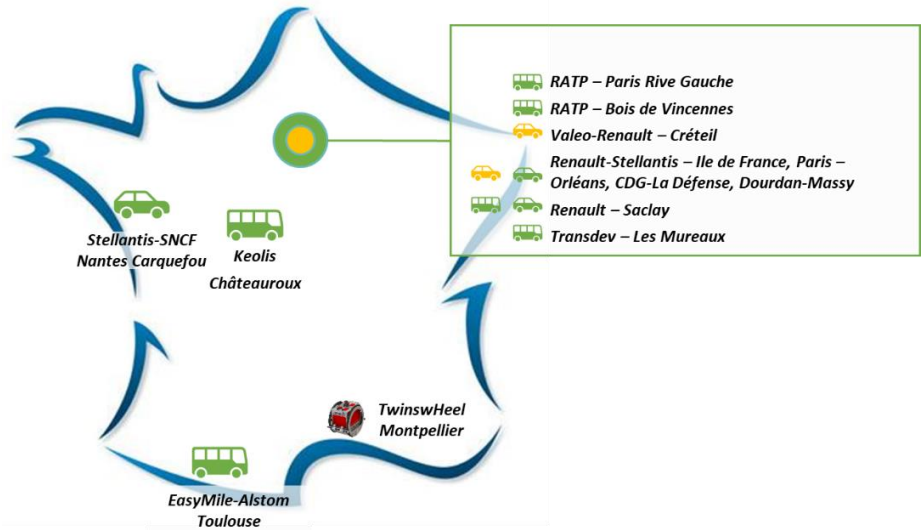
The use cases are associated with different experimental sites selected to match the needs expressed by the local authorities and to explore complementary use cases.

Fields of application	Automated passenger vehicle	Automated road transport	Automated freight transport and logistics system
Use case categories	<i>Automated driving</i>	<i>Parking valet</i>	<i>Ride hailing, ...</i>
	<i>New mobility services</i>	<i>Public transport</i>	<i>Last mile delivery</i>
<i>Divided highway</i>			
<i>Parking</i>			
<i>Dedicated lanes</i>			
<i>Peri-urban</i>			
<i>Urban</i>			
<i>Private site</i>			

They were selected according to the following criteria: services offered, technical capabilities of the vehicles, interoperability of vehicles on the same infrastructure, types of environment, complexity and variability of the routes, types of users, use of connectivity, possible presence of an operator on board, traffic speed, types of vehicle, types of roadway.

Experimental sites

-  Automated passenger vehicle
-  Automated road transport system and shared mobility
-  Automated freight and logistics



Renault Saclay



Keolis Rennes



Transdev Les Mureaux



TwinsWheel Montpellier



EasyMile/Alstom Toulouse



RATP Bois de Vincennes



Keolis Chateauroux



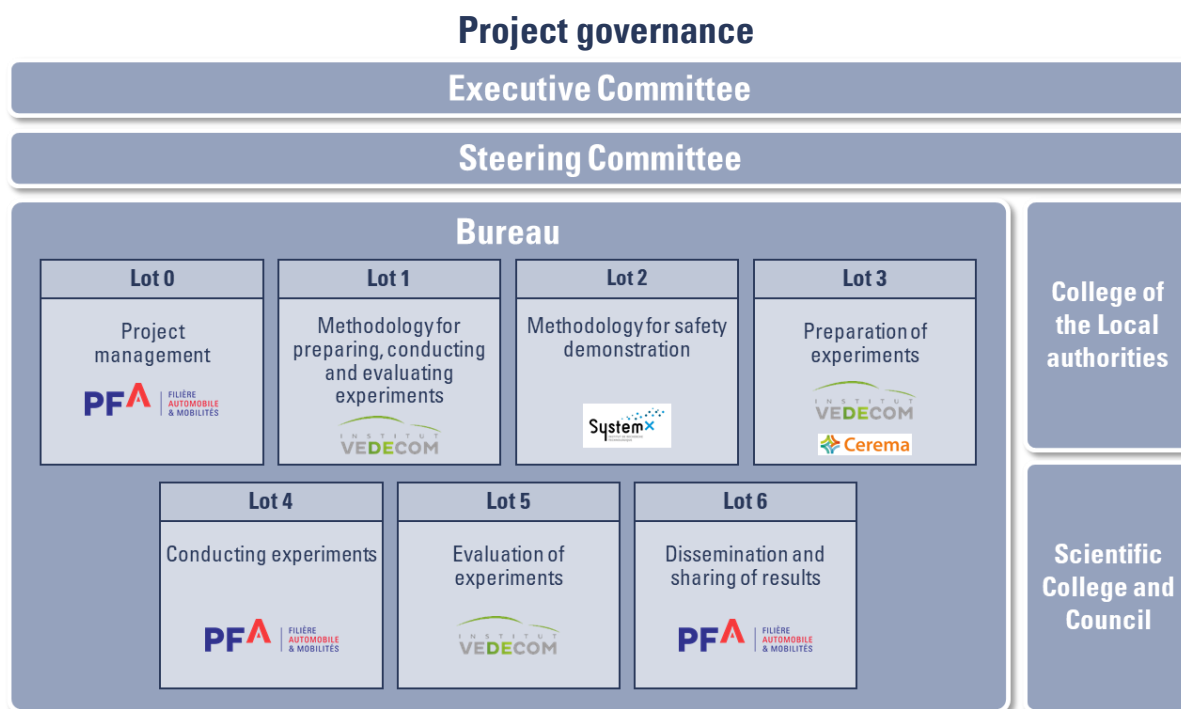
SNCF/Stellantis Nantes-Carquefou



Valéo Créteil



Stellantis/Cofiroute Ile de France : L3 & L4



A methodology for the common good

This project aims to develop a "common good", defined by the body of knowledge whose mutualisation and sharing with public authorities benefits the development of public policies and the construction of a state of the art, particularly in terms of safety, impact assessment and acceptance.

This common good will be built around a common and shared methodological approach that will make it possible to meet 5 challenges:

1. Defining the methodologies for preparing, carrying out and evaluating experiments and safety demonstrations,
2. Testing, evaluating and validating the level of performance achieved by the automated driving and mobility functions, their acceptance and their suitability for the new mobility services targeted,
3. Ensuring the collection and structuring of data from the experiments necessary for the constitution of the common good,
4. Assessing the benefits for users and the societal benefits of new automated mobility services,
5. Providing national authorities with the knowledge and the common good resulting from the experiments carried out, in order to enable the orientation of public policies.

The common methodology of the project is an adaptation of the European reference methodology FESTA (Field opErational teSt supportT Action) to SAM needs.

Fields evaluated:

- Technical performance of the vehicle/infrastructure/environment system,
- Attractiveness and acceptance of all users,
- User behaviour and road safety,
- System performance and its impacts on mobility,
- Impacts on the environment,
- Socio-economic evaluation.

For the safety demonstration, the project is based on a global methodology including:

- Shared safety objective guidelines,
- A methodology for the implementation of these safety objectives,
- A catalogue of critical scenarios relevant to the demonstration of security,
- A methodology for demonstrating security through the use of simulation,
- A methodology and a catalogue of physical tests,
- A typical safety demonstration procedure combining risk analysis, theoretical justification, simulations and physical tests.

A common good made available to public authorities and local planning actors

The project deliverables, consisting of nomenclatures, methodologies and results, contribute to the common good. The major impact of the SAM project can thus be assessed in terms of the common good generated and its possible use by the various stakeholders (industrialists, public authorities, academics) in order to produce national references, a state of the art and proposals for international standards, in particular:

- Reference systems for use cases and scenarios,
- Rules for pooling data from experiments,
- Methodologies for the preparation, implementation and evaluation of experiments,
- Compatibility of infrastructure, vehicle and service characteristics,
- Overall methodology for safety demonstration,
- Characterisation of the behaviour of automated vehicle users and third-party users,
- Socio-economic evaluation of mobility projects for marketable uses by 2022.

The deliverables of the SAM project are all elements made available to public and local authorities, actors in territories and infrastructure planning to anticipate the evolutions and investments necessary for automated driving functions and automated mobility services.

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About the Automotive Platform (PFA) -

The Automotive Platform brings together the automotive industry in France. It is responsible for defining and implementing the industry's strategy in terms of innovation, competitiveness, employment and skills, and for speaking for the industry.

Since 4 December 2017, the PFA has been chaired by Luc CHATEL. Its governance is based on a Council of Presidents comprising the heads of French carmakers (Stellantis and RENAULT), equipment manufacturers (FAURECIA, MICHELIN, PLASTIC OMNIUM, VALEO) and federations (CCFA, FIEV, trade federations: FFC, FIM, GPA, SNCP).

More : <https://pfa-auto.fr/>

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