

# SIP-adus Workshop 2017

Regional Activities and FOTs

## French National Program for Autonomous Vehicle



FILIÈRE  
AUTOMOBILE  
& MOBILITÉS

Tuesday November 14

Christian ROUSSEAU

RENAULT





---

**1. AUTONOMOUS VEHICLES  
FRENCH NATIONAL PROGRAM**

**2. FOCUS ON SAFETY APPROACH**

**3. 2 SCENARIO BASED VALIDATION  
PROJECTS : MOOVE/SVA**



---

# **1. AUTONOMOUS VEHICLES FRENCH NATIONAL PROGRAM**

**2. FOCUS ON SAFETY APPROACH**

**3. 2 SCENARIO BASED VALIDATION  
PROJECTS : MOOVE/SVA**

# AUTOMATED DRIVING FRENCH NATIONAL PLAN

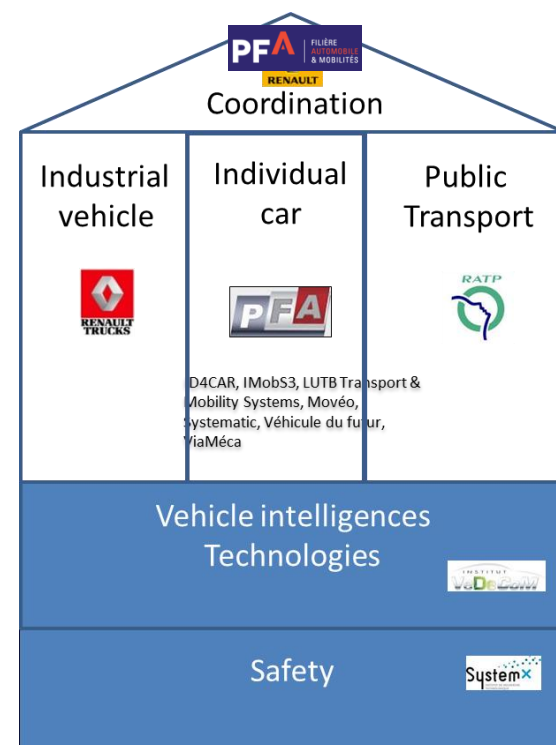
Affordable autonomous vehicles for all from 2020

## 3 ambitions :

- ▶ a place for autonomous vehicle experimentation
- ▶ a center of excellence for embedded intelligence technologies
- ▶ a key player within critical system safety domain

## 5 Goals

- ▶ Set the French regulatory/legal framework and AV eco-system
- ▶ Demonstrate safety
- ▶ Invest on Key technologies
- ▶ Demonstrate social benefits through experimentations
- ▶ develop customers awareness and acceptance



# STRONG COOPERATION BETWEEN ADMINISTRATIONS, ACADEMICS & INDUSTRIES WITHIN THE NON-COMPETITIVE AREA

Scope: car, shuttle, bus, industrial vehicle, mobility services

## 1. Experiments



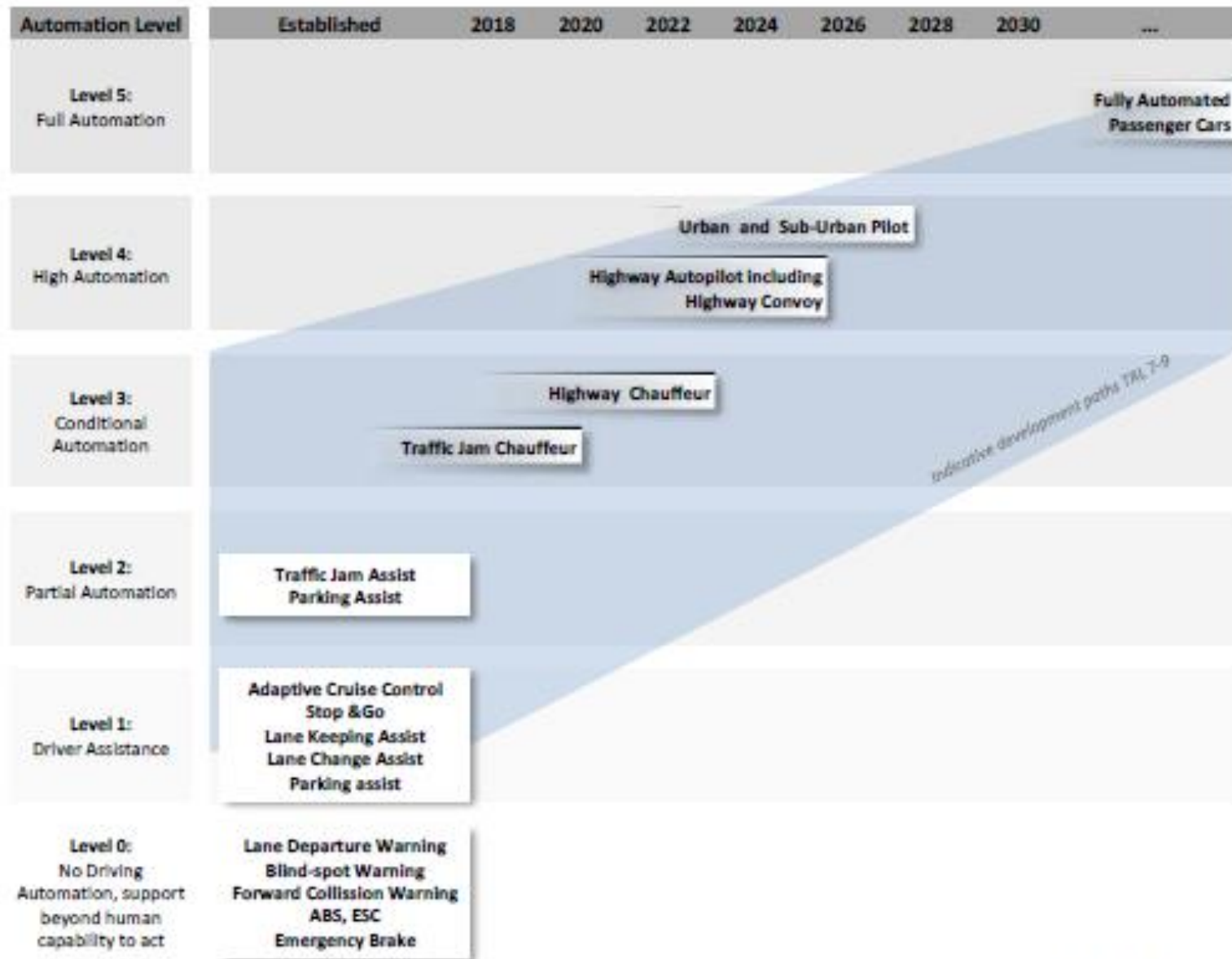
## 2. AV Ecosystem



## 3. Technologies

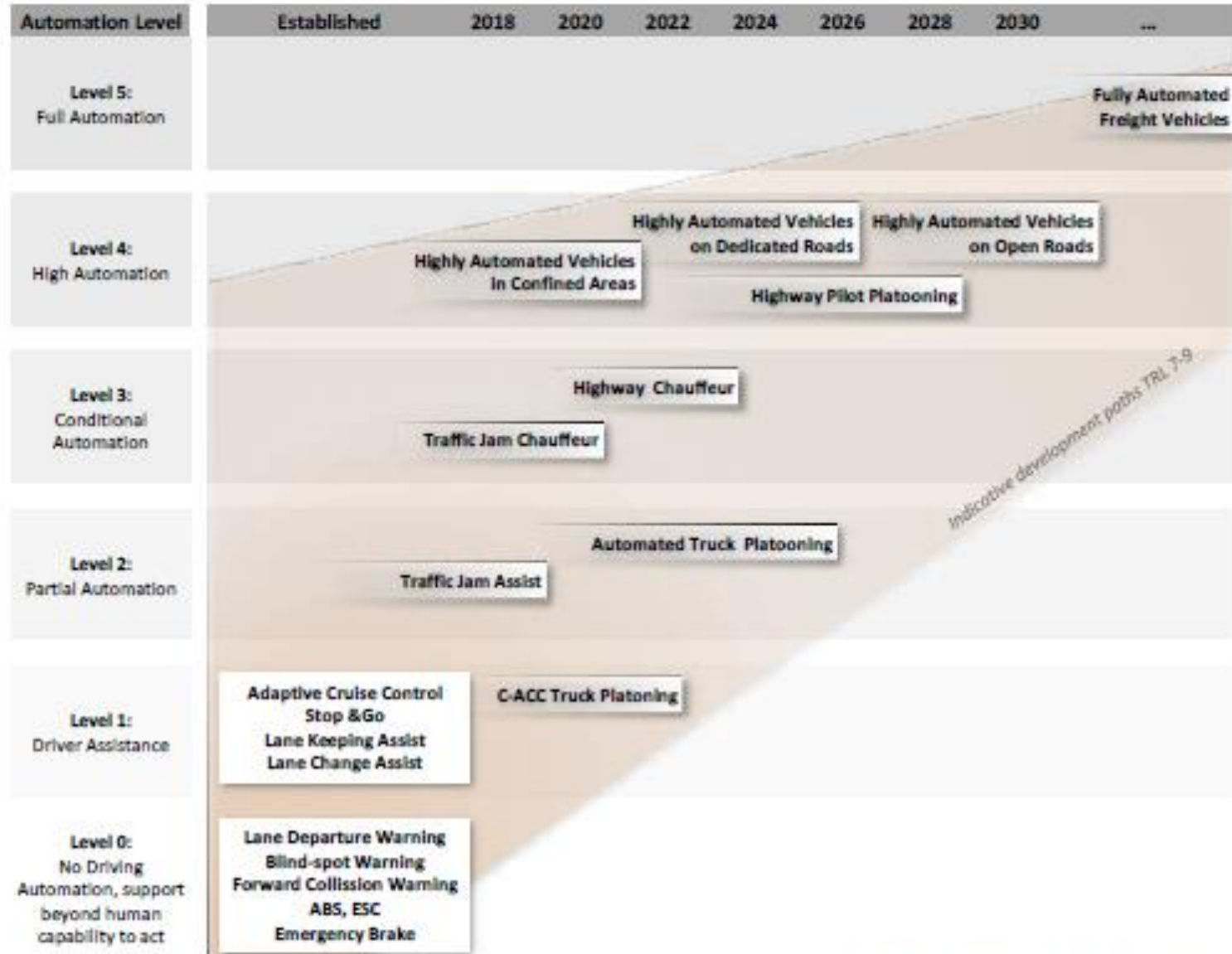


# Roadmap Automated Passenger Cars



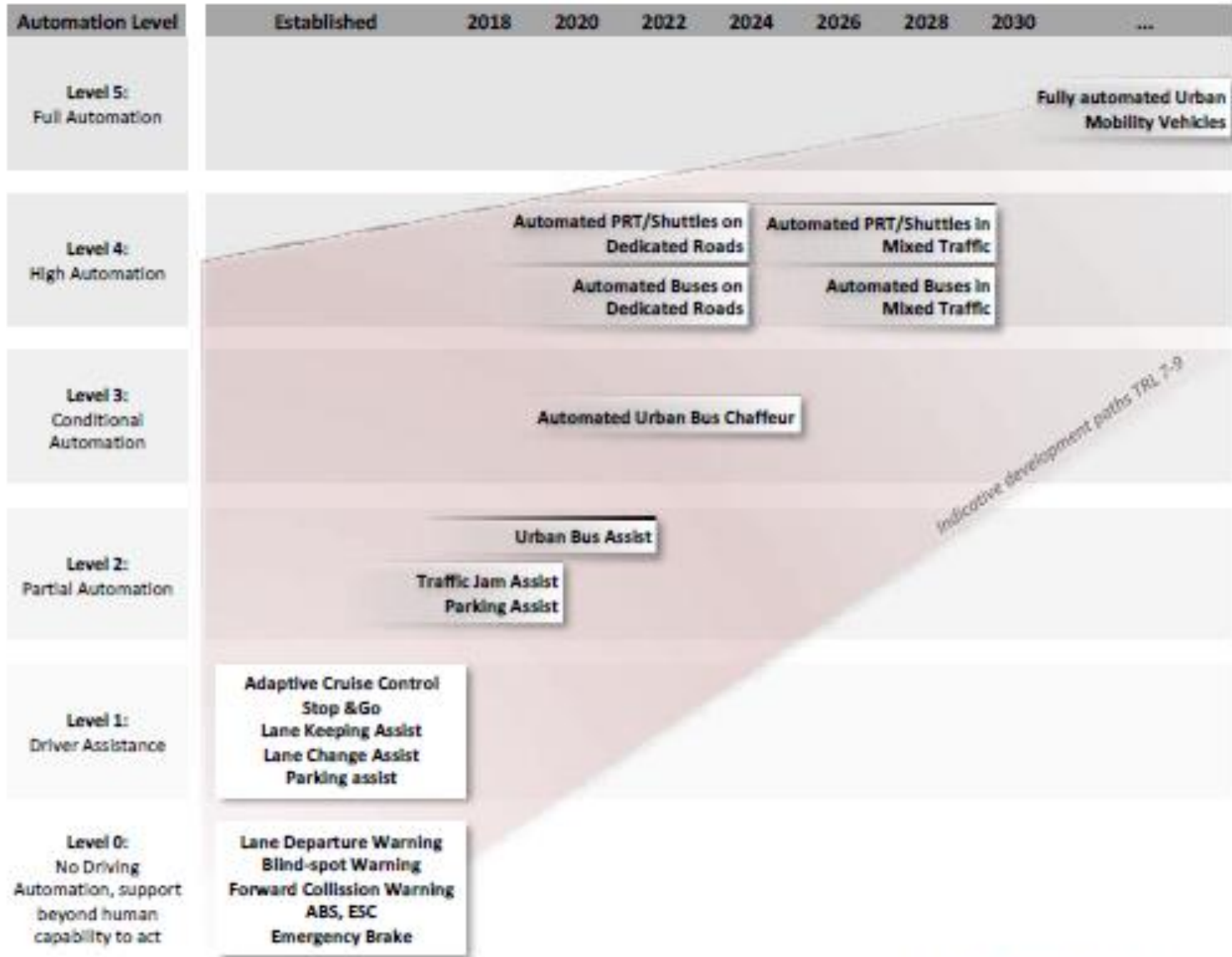
Passenger Cars: M1 category

# Roadmap Automated Freight Vehicles



Truck: Freight vehicle > 3.5 tonnes categorie N2 or N3

# Roadmap Urban Mobility Vehicles

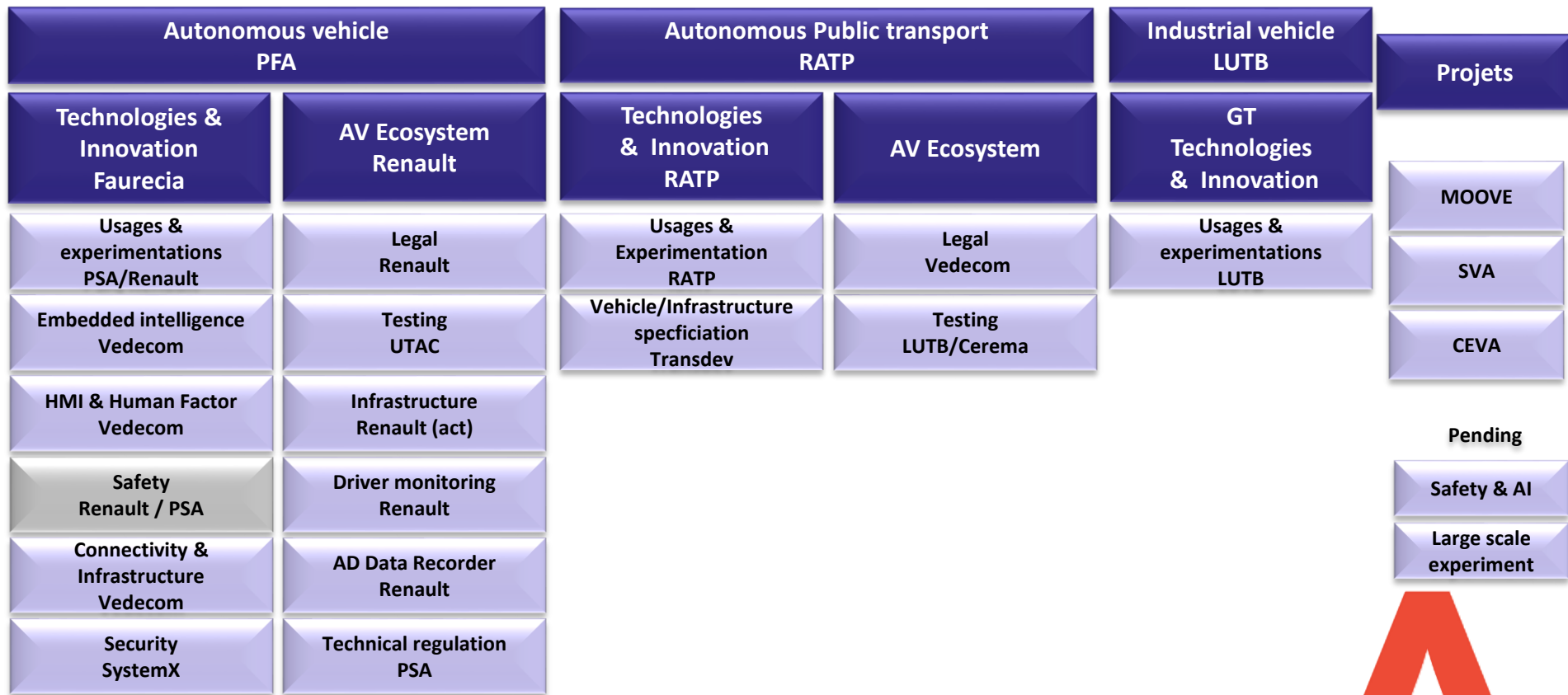


PRT (Personal Rapid Transit) incl. Urban Shuttle  
City Bus/Coach: M2 < 5 tonnes < M3



# PROGRAM ORGANIZATION

## Program Steering committee



# ACHIEVEMENTS



AV Experimentations	12	28	46
---------------------	----	----	----

**AV Ecosystem**

- Administrative Autorisation template and process for experimentation
- Declaration of Amsterdam
- International coordination @ G7 Transportation Nagano
- >10000 Kms roads
- 12 Working Groups launched
- France /Germany/Luxembourg Cross border Experimentation site
- Test bed





PROJET DE LOI relatif à la transition énergétique pour la croissance verte

**Technologies**

- MOOVE / SVA Projects
- ITE Vedecom / IRT SystemX
- #FranceIA



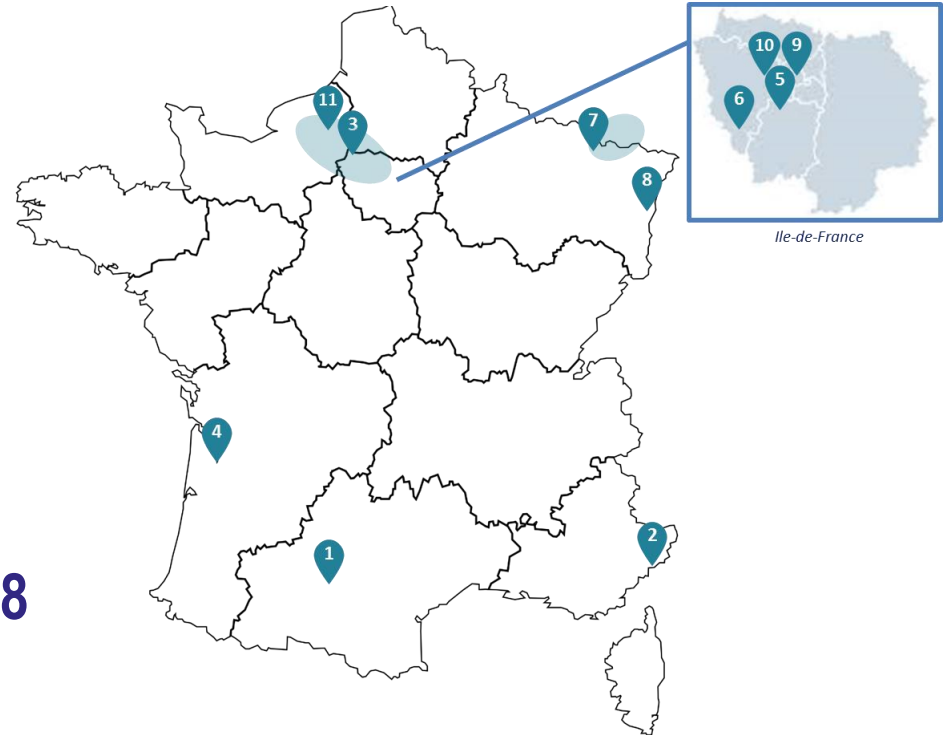
# Conclusion:

## ✓ 3 principles:

- Step by step
- Co-elaboration
- Impact assessment

## ✓ « Learning by doing »

## ✓ Large scale experiment by 2018





---

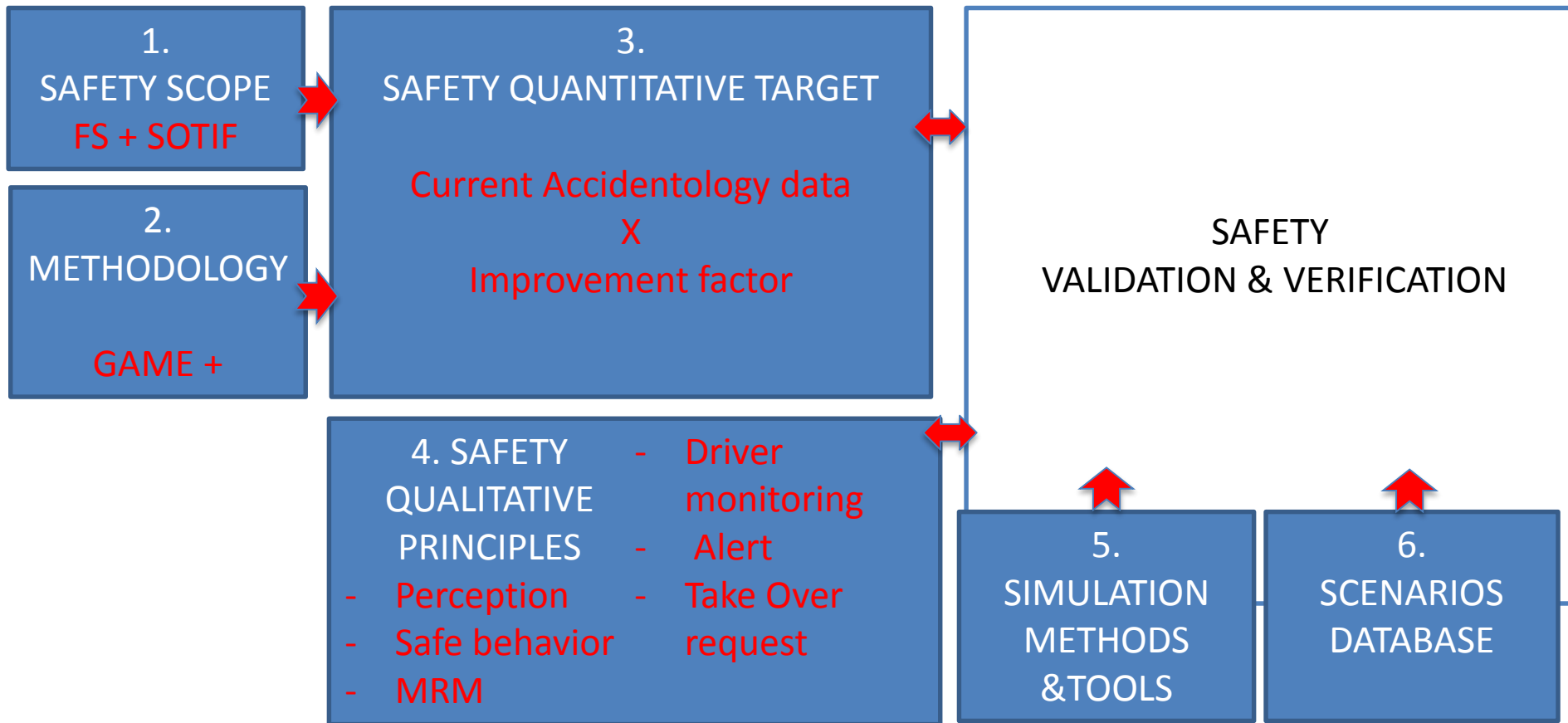
1. AUTONOMOUS VEHICLES  
FRENCH NATIONAL PROGRAM

**2. FOCUS ON SAFETY APPROACH**

3. 2 SCENARIO BASED VALIDATION  
PROJECTS : MOOVE/SVA

# FRENCH AD SAFETY APPROACH

## Improve road safety with AV



GAME + : Globally safer instead of globally as safe as



---

**1. AUTONOMOUS VEHICLES  
FRENCH NATIONAL PROGRAM**

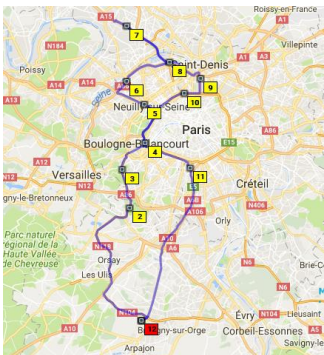
**2. FOCUS ON SAFETY APPROACH**

**3. 2 SCENARIO BASED VALIDATION  
PROJECTS MOOVE /SVA**

# SCENARIO IDENTIFICATION (MOOVE Project)

1. Real world driving safety critical scenarios (SCS)
2. SCS occurrence statistics
3. New SCS

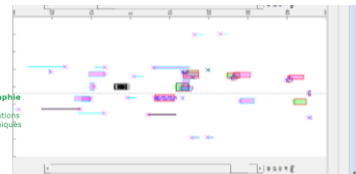
0. Use case Definition & Targeted scenarios



1. Data collect



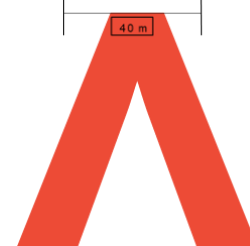
2. Data transformation at common format



3. Calculation of high level parameter (Sensors independant)

Relative\_Velocity\_X  
 Relative\_Velocity\_Y  
 Absolute\_Velocity\_X  
 Absolute\_Velocity\_Y  
 Relative\_Accel\_longi  
 Accel\_longi  
 .....  
 Time\_To\_Collision  
 Time\_Between\_Vehicles  
 Status\_Mobile  
 Pos\_X  
 Pos\_Y

4. Scenario searching and clustering



# DIGITAL SCENARIO LIBRARY & TEST CASE GENERATION (SVA Project)

SVA

System<sup>x</sup> Industrial partners

PSA PEUGEOT CITROËN  
 Continental  
 RENAULT  
 Valeo

OKTAL SIMULATION BY MOTION  
 ALL4TEC

OPTIS  
 apsys  
 sector group

ou  
 asssystem

Academic partners

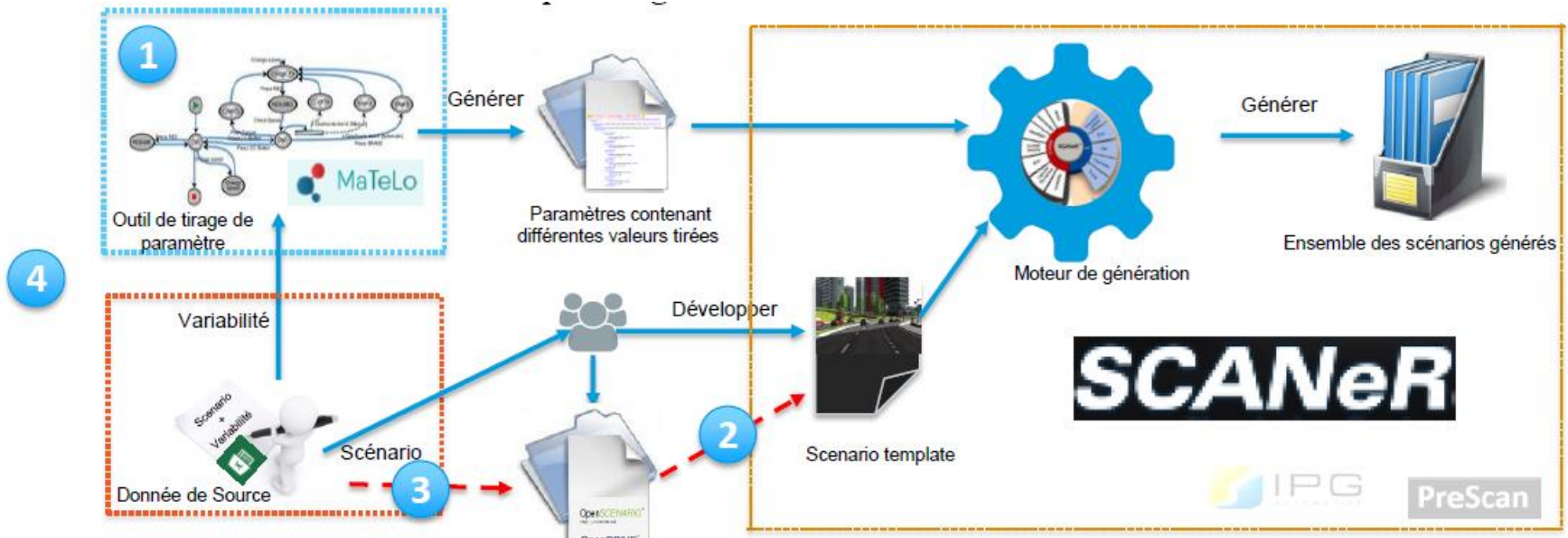
université  
 PARIS-SACLAY

LNE  
 Le progrès, sans passion à partager

lsu

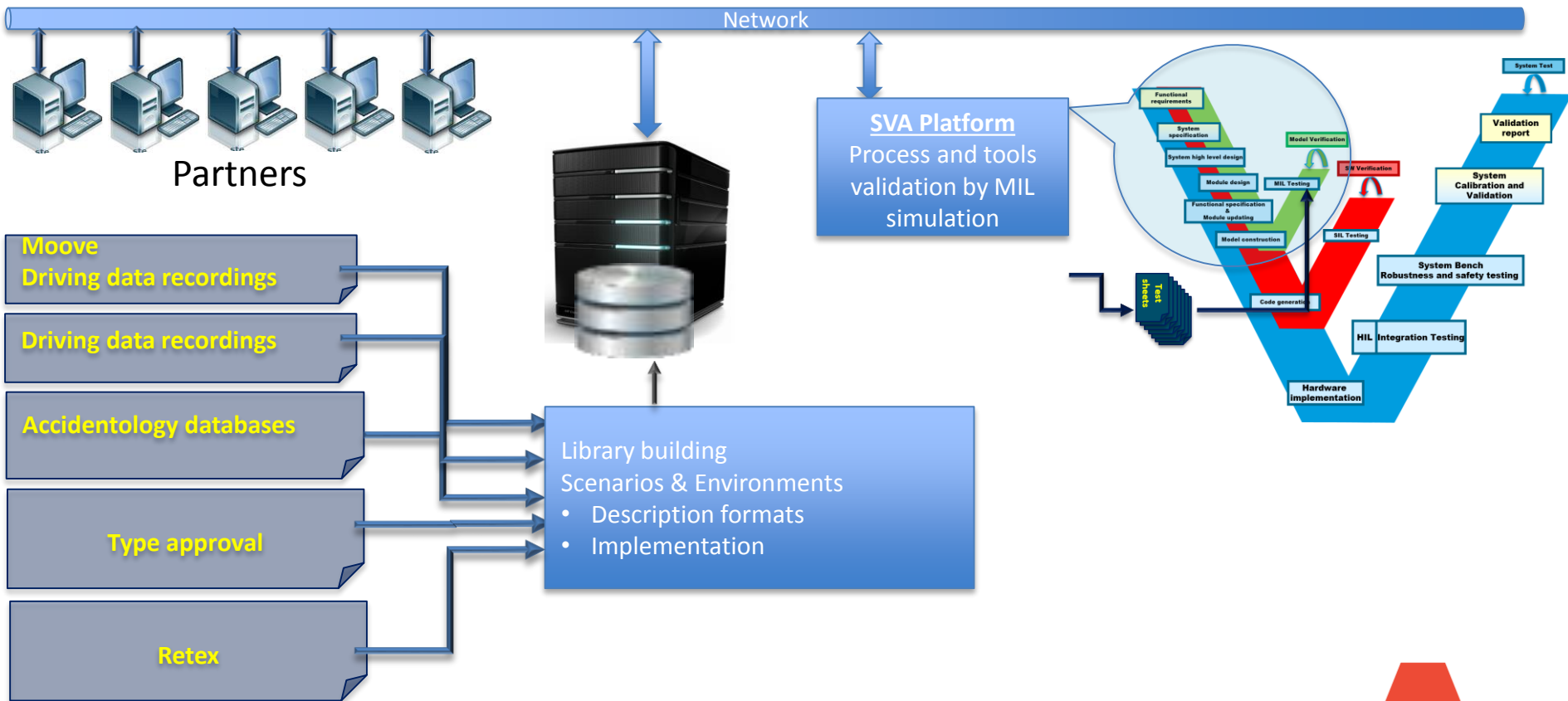
c2a

1. Simulation platform
2. Digital Scenarios library





# DIGITAL SCENARIO LIBRARY IMPLEMENTATION



# Thank you

## Contact Persons:

**Jean-François SENCERIN**

**Autonomous Driving NFI Program Director**

**[Jean-francois.sencerin@Renault.com](mailto:Jean-francois.sencerin@Renault.com)**

**Christian Rousseau**

**Renault CAV Strategic AREA Director**

**[Christian.rousseau@Renault.com](mailto:Christian.rousseau@Renault.com)**



FILIÈRE  
AUTOMOBILE  
& MOBILITÉS

