



TRANSPOLIS

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**COMMITTED TO
A SAFER MOBILITY**

CONFIDENTIAL

June 2019



KEY FIGURES

- **Private Co. created in 2011**
- **A DNA around SAFETY for mobility**
- **A unique ecosystem of 22 shareholders and tech partners**
- **Investment of 20 millions made with private companies + IFSTTAR + French Gov., Region and City of Lyon**
- **International footprint in USA, Canada, Japan, China.**



SHAREHOLDERS & STAKEHOLDERS

PUBLIC STAKEHOLDERS



TECHNOLOGY PARTNERS



MAJOR PROJECTS WITHIN OUR SCIENTIFIC COMMITTEE



Automated & connected vehicles



Traffic management



Telecommunication / 5G



EV fast charging



Fleet management



Last mile delivery



IoT



Intelligent infrastructure





COMMITTED TO THE AD COMMUNITY

NFI : member of the WG on homologation

PFA : commitment with CARA cluster

MOVEO cluster : member of the ADAS group
of 12 tech SMEs

CARA cluster : member of the ADAS group
for commercial vehicles

SIA : member of the SIA

IAMTS by SAE : membership in progress



OUR MISSION & VISION

**Helping our customers
accelerate the time to market
of new and safe mobility solutions**

**Providing more added value services
to innovate, test, validate
Vehicles and Infrastructures**



ACTIVITIES & BUSINESS LINES

SINCE 2016 : SAFETY FOR AUTOMATED AND CONNECTED VEHICLES

Engineering & simulation services – Testing & proving grounds for active safety



SINCE 2014 : SAFETY FOR PASSENGERS

Safety sensors manufacturer



SINCE 1984 : SAFETY FOR ROAD INFRASTRUCTURES

Simulation and crash test of road safety infrastructures



ACTIVITIES & BUSINESS LINES

SAFETY FOR ROAD INFRASTRUCTURES

Transpolis is a test laboratory accredited by the **COFRAC** (French Accreditation Committee) member of the **European Co-operation for Accreditation (EA)** according to the requirements of the quality standard **ISO / IEC 17025** (General requirements concerning the competence of laboratories calibrations and tests).

We perform tests on road devices of all types, according to the standards in force **EN1317, EN12767, IWA 14-1 or other.**



ACTIVITIES & BUSINESS LINES

SAFETY FOR PASSENGERS **>100 PAIRS SOLD WORLDWIDE**

Developed by IFSTTAR for the Q-Dummies / children from 1y to 10y old. Fitted vertically in the dummy's abdomen they are an indispensable tool for assessment of abdominal lesions caused during crash tests on child restraint systems.

In the context of the new regulation **ECE R129** abdominal pressure sensors are now **adopted in the UN Regulation** for dummies used to certify restraint systems for children.

International project ABISUP is under way to **extend the use of this sensors to adult dummies.**

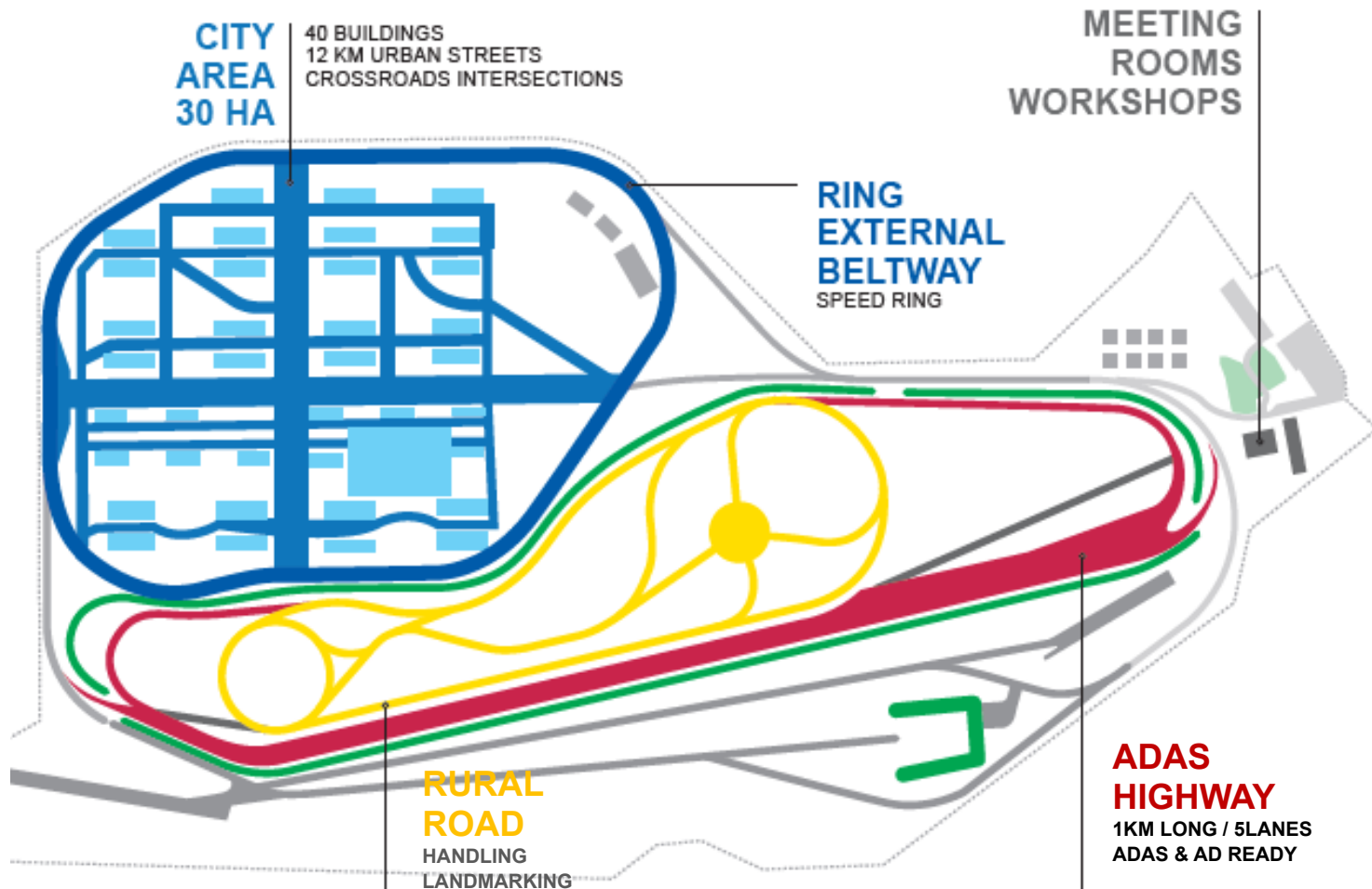




ACTIVITIES & BUSINESS LINES

SAFETY FOR AUTOMATED & CONNECTED VEHICLES

Engineering & simulation services - Testing & proving grounds for active safety





NEW PLAYGROUND

TOTAL 80 HA – CITY AREA 30 HA



FLEX-CITY LAB



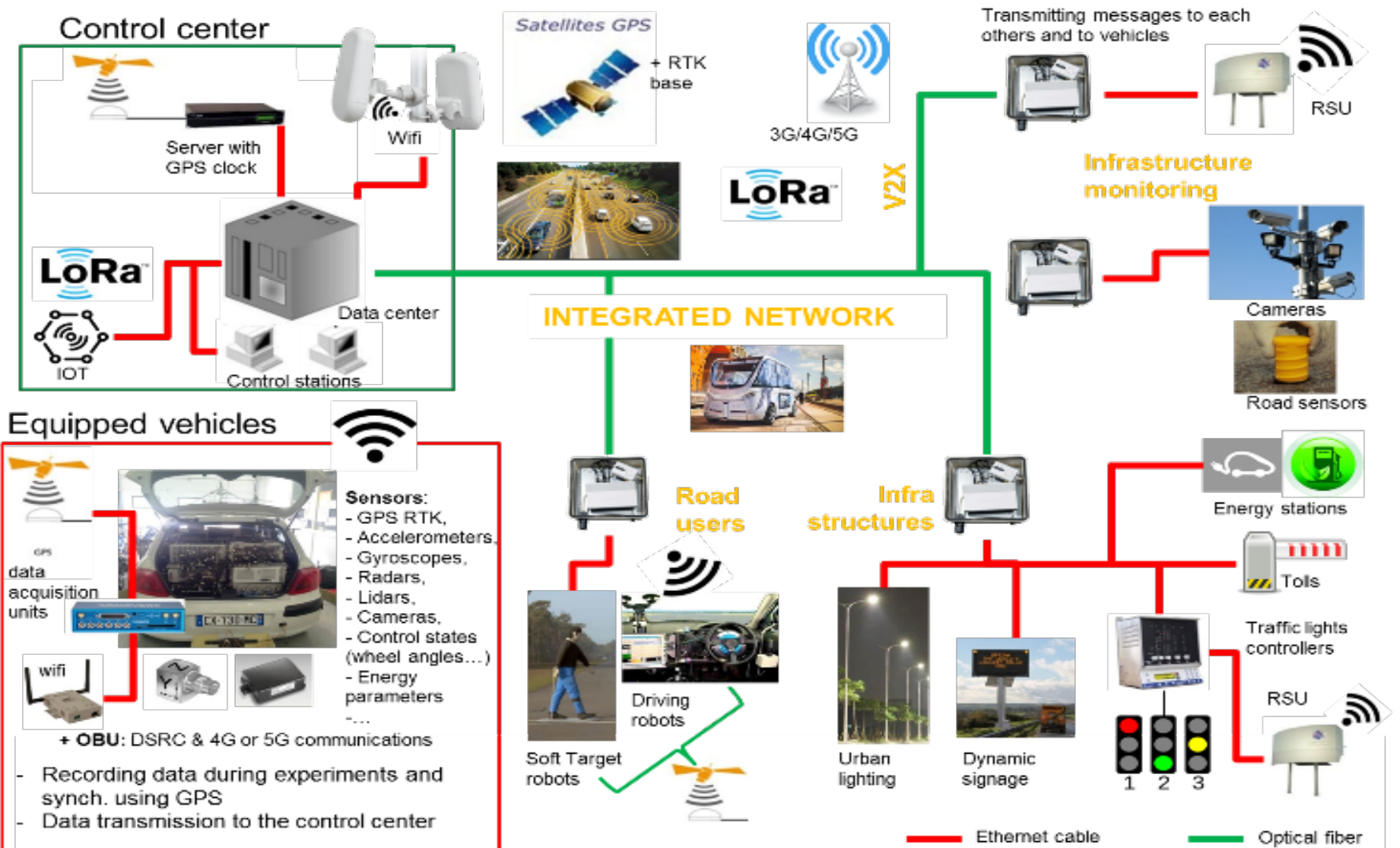
- 40 buildings, 12 km urban streets, 30 intersections
- 20 streets from 100 to 300 m long, East / West
- Beltway with 3 lanes, Boulevards with 5 lanes
- Urban toll, Tunnel (*in progress*)
- Connectivity wifi, IoT, ITSG5, 3G/4G and 5G
- Cameras, RSU, lighting, connected traffic lights



FLEX-CITY LAB



NETWORK AND CONNECTIVITY



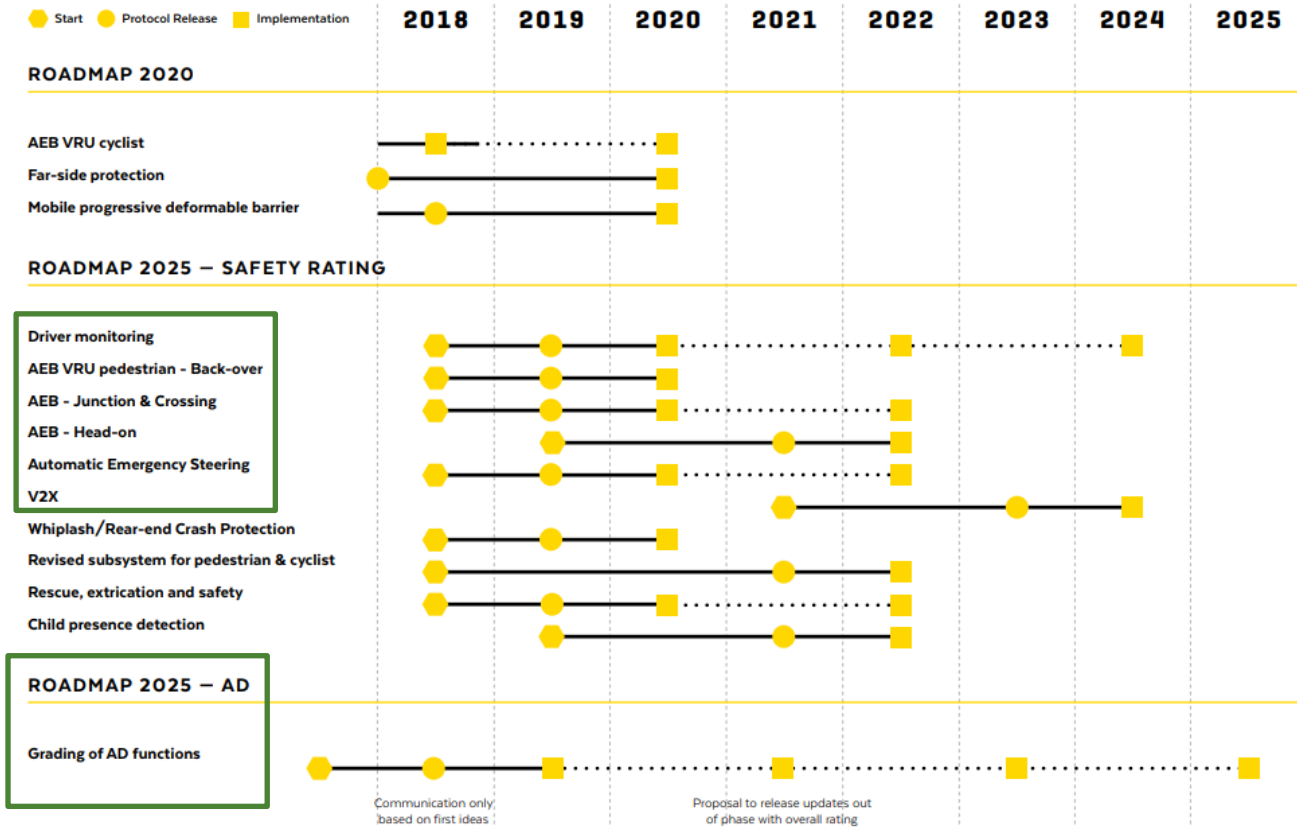


AD, ADAS AND EURONCAP TESTING





EURONCAP 2018 ready => on the road to EURONCAP 2025



More specific scenarios to develop the different functions of the Autonomous Driving levels and ADAS Systems

Apparition of new ADAS systems:

- Automatic Emergency Steering (evasive manoeuvres)
- V2X

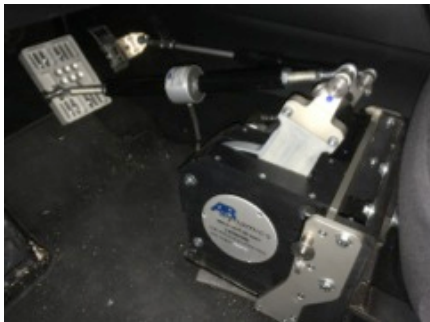
Apparition of a new target type : Powered Two Wheelers



OUR ADDED VALUE ADAS & AD

- **Performing EuroNCAP 2018 tests according protocols : control of equipments, test procedures, data processing methods**
- **Performing standard tests methods for ADAS vehicle assessment**
- **Developping technical skills and test engineering methods**
- **Controlling output data and report**
- **Developping test objectivation *methods* and *robustness* (ADAS vehicle assessment)**

OUR TEST EQUIPMENTS

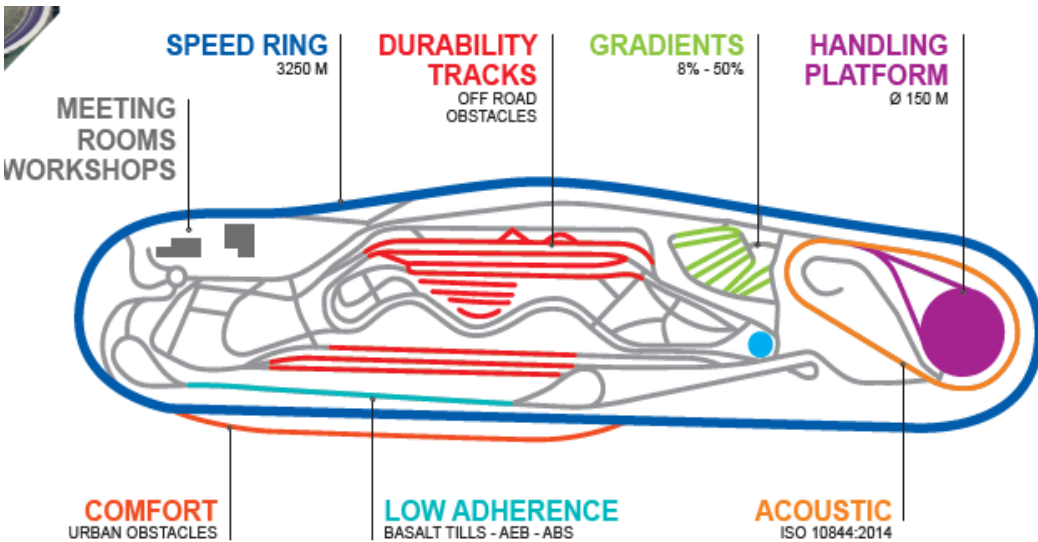




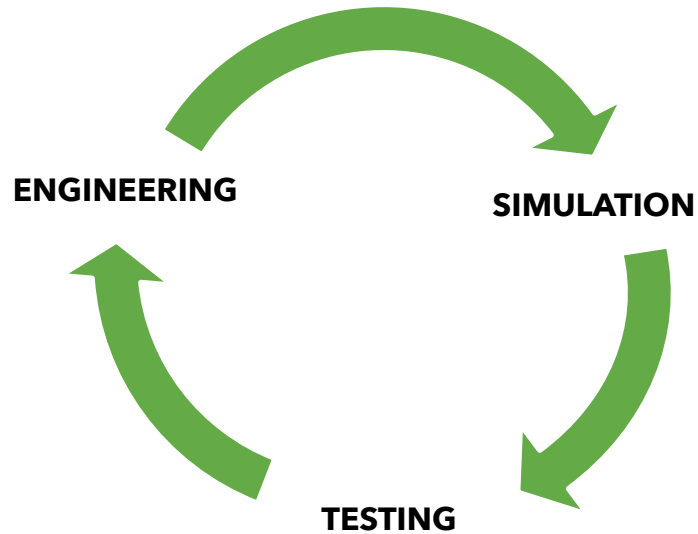
COMPLEMENTARY PROVING GROUND FOR COMPLETE VEHICLE TESTING



- 60 HECTARES – 42 KM TRACKS
- COMPLETE VEHICLE TESTING
- SPECIFIC TRACKS FOR COMMERCIAL VEHICLES / SUV



OUR SERVICES



Safety
&
Confidentiality

- > **Scenario design & management**
- > **Test protocols and definition**
- > **Vehicle instrumentation / sensors integration**
- **Virtual testing with digital twin and simulation tool**
- **Physical testing with proving grounds + open roads**
- > **Data collection and analysis**
- > **Unique Ecosystem of technology partners**



SOME CUSTOMERS





LESSONS LEARNED FROM OUR EXPERIENCE WITH CUSTOMERS

SOME CHALLENGES FOR CAV :

1. VALIDATION OF A LEVEL 5 AUTONOMOUS VEHICLE = BILLIONS OF KM
 - ⇒ MORE **SIMULATION** NEEDED WITH A VIRTUAL TRANSPOLIS + SIMULATION TOOL.
 - ⇒ THE **MOST CRITICAL SCENARIO HAVE TO BE PHYSICALLY TESTED** IN A SAFE AND CONTROLLED ENVIRONMENTS

*Simulation allows for checking the behavior of autonomous vehicles in a huge number of scenarios, environments, system configurations and driver characteristic and can help **focusing on the necessary physical tests to verify the simulation results**. Field tests will contribute with further validation insights, which derive from unexpected driving situations and retroactive effects under real driving conditions.*

2. DATABASE AND CHOICE OF **SCENARIO** TO FOCUS ON THE MOST CRITICAL
3. **CONNECTIVITY** V2X V2I : A NECESSARY MIX OF TECHNOLOGIES TO MAKE THE SYSTEMS MORE ACCURATE AND CAV MORE SAFE.



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Contact

Stéphane BARBIER

stephane.barbier@transpolis.fr