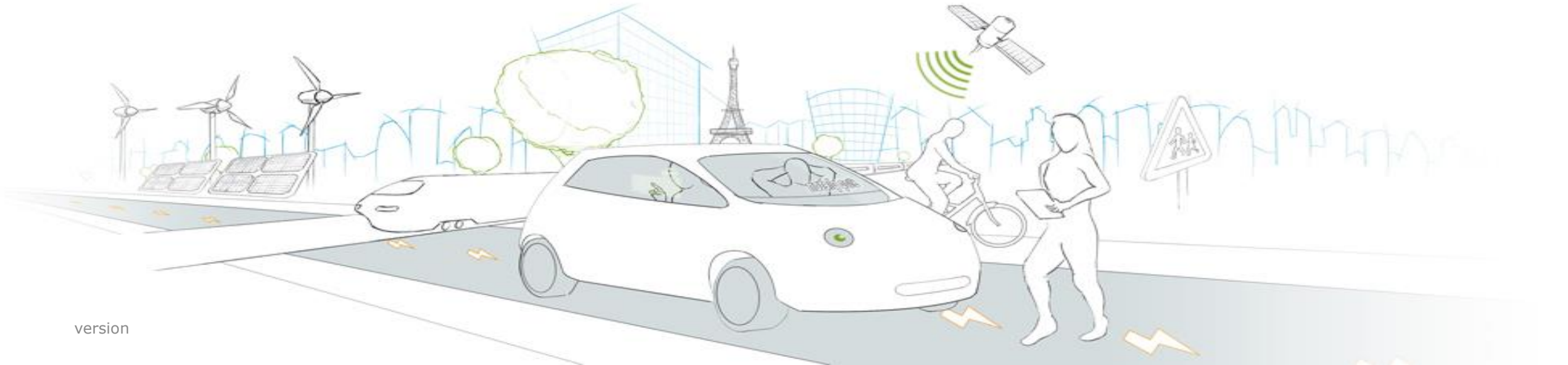
INSTITUT VEDECOM
DU VÉHICULE DÉCARBONÉ ET COMMUNICANT ET DE SA MOBILITÉ

NEXT GENERATION TRANSPORT

Nadège FAUL – November 2017



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CARTRE

Coordination of Automated Road Transport Deployment for Europe

SIP-Adus Workshop – November 2017

CARTRE and SCOUT are funded by the European Union Horizon 2020 Work Programme

Gathering top leaders from policy and industry to sketch the state of the art and major challenges on the path to automated driving in Europe and beyond

Stakeholder network – Thematic interest groups – Data exchange and evaluation – Common position papers

Policy and regulatory needs	Socio-economic Assessment	Digital and physical infrastructure	Production and industrialisation	Safety validation and roadworthiness testing	In-vehicle technology enablers
User awareness, acceptance, ethics, training	Human factors	New mobility services, shared economy	Connectivity	Big data, AI and their application	Data exchange and common evaluation framework

Start: 01.10.2016

End: 30.09.2018

Budget: 3 Million €

Partners: 36

Objectives

- **Establish** European leadership in private-public means
- **Organise** annual international conference in Europe
- **Explore** feasible use cases in line with EU strategy
- **Analyse** gaps and risks for uptake and acceptance
- **Inform** actors through comprehensive knowledgebase
- **Identify** sustainable business models
- **Support** international cooperation with US and Japan

Highlights

- **February 2017**: Expert workshop on co-creation of use cases and visions for automated driving
- **April 2017**: 1st European Conference on Connected and Automated Driving with 600 stakeholders attending and eight thematic breakout sessions
- **June 2017**: ERTRAC Roadmap on research into CAD formulated with thematic interest group input

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The scope of CARTRE

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- Short and long-term visions, scenarios, and deployment paths
- Personal, Freight and Urban Mobility
- Identification of challenges, drivers and influencing factors
- 11 thematic areas
- Horizon : 2040

Vehicle automation development path

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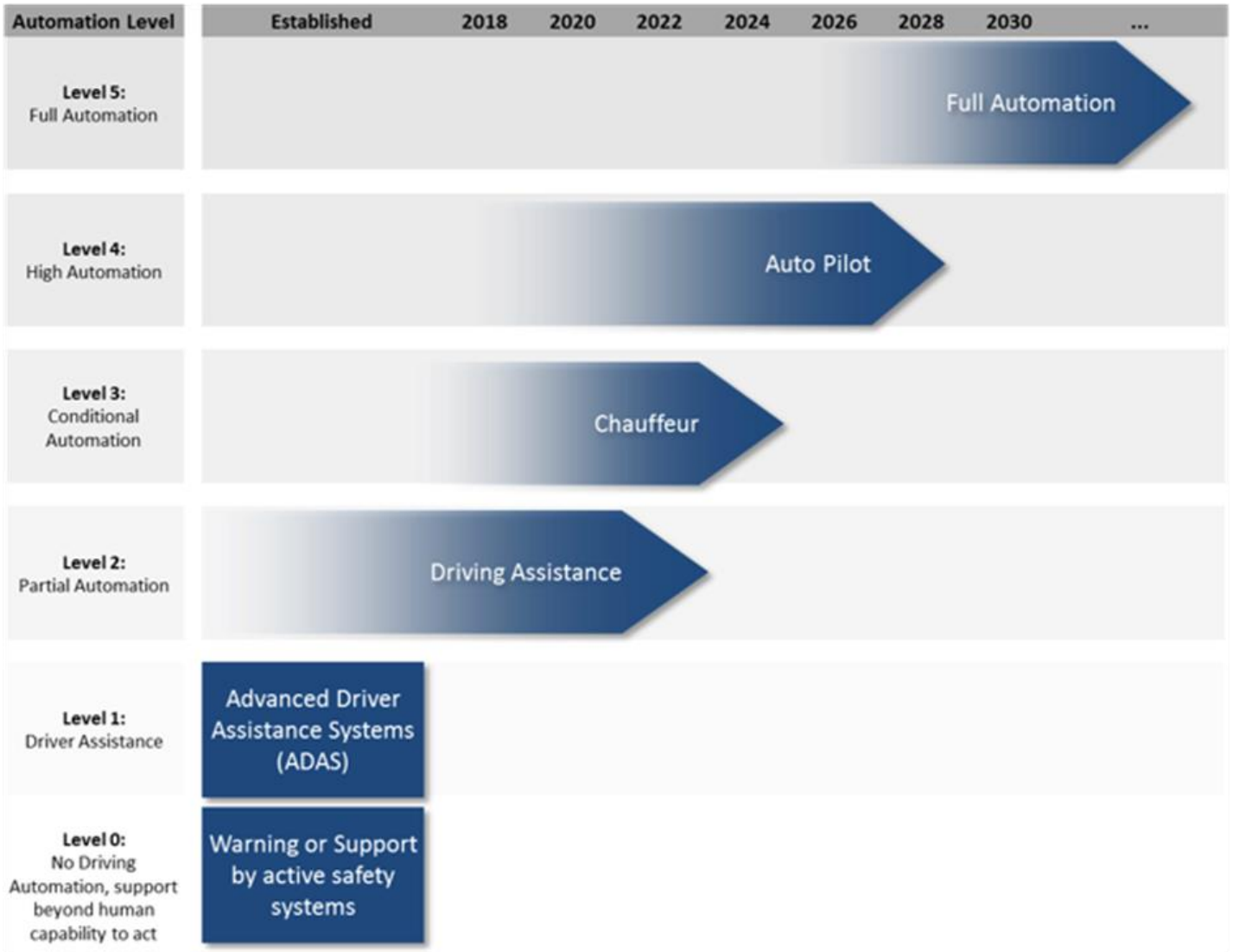

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Zoom on Urban mobility path

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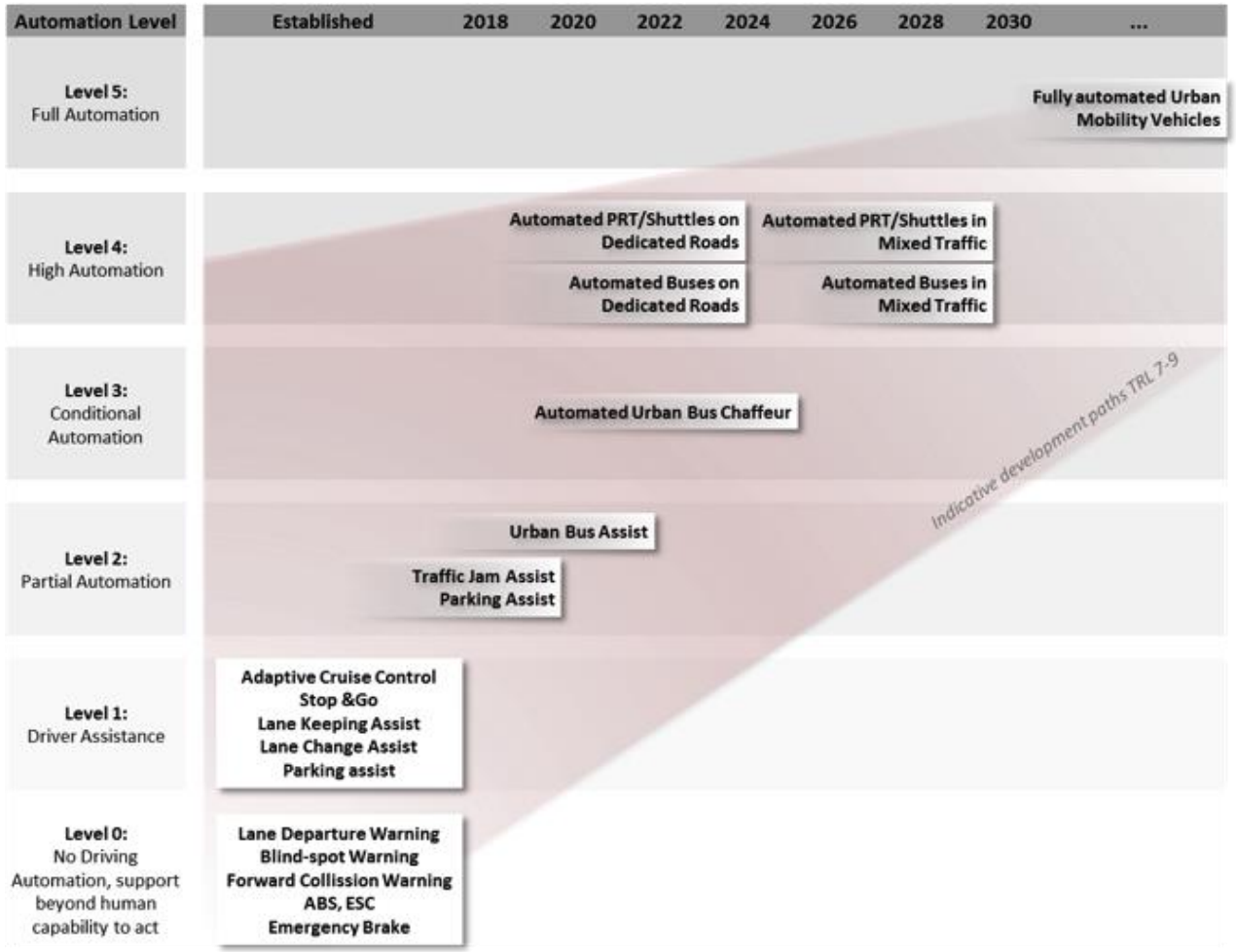

PRT (Personal Rapid Transit) incl. Urban Shuttle
City Bus/Coach: M2 < 5 tonnes < M3

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CAD 2017 session : Shared and automated mobility services for our cities

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How to improve and sustain urban mobility for all users with shared and automated services ?

Common statements	Impact
New mobility services need to be fully integrated to the existing public transport, and complement them	Business models and economic viability
Shared automated vehicles should be prioritized	Better use of public land, mitigate risk of increased congestion
Human presence in the automated vehicles remains an issue	User acceptance, passengers' safety, security, ticketing
Common need to gain more knowledge to get ready for full-scale deployment through pilots and demonstrations	Ability to deploy in a short term

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Conclusions

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- Roadmaps still in evolution
- Topic addressed to solve the main urban problems : congestion, pollution, road security
- Other targets can be more investigated : low mobility persons, elderlies…

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Thank you!

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CoEXist

Project Details

- “Automation-ready” transport models and road infrastructure for the coexistence of automated and conventional vehicles
- Funding Programme: **Horizon 2020** (Europe's Research and Innovation Programme)
- Duration: **May 2017 – April 2020**
- Total Budget: **3.5 m€**
- **Strategic Aim**: To **bridge the gap** between connected and automated vehicle (CAV) technology and transportation and infrastructure planning by strengthening the capacities of urban road authorities and cities to **plan for the integration of CAVs on the same network**.
- **16 partners** from 7 European countries (technology providers, automotive industry, academia, European associations, city road authorities).

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No. 723201-2

Approach

- **Automation-ready transport modelling**: Validated extension of existing microscopic and macroscopic transport models to include different types of CAVs (passenger car/ light-freight vehicle, automation levels).
- **Automation-ready road infrastructure**: Tool to assess the impact of CAVs on safety, traffic efficiency and space demand and development of design guidance for hybrid (CAV-/CV-shared) infrastructure.
- **Automation-ready road authorities**: Elaboration of eight use cases in four road authorities (Gothenburg, Helmond, Milton Keynes and Stuttgart), used to evaluate CAV impacts on safety, traffic efficiency and road space requirements (with CoEXist tools) and making detailed hybrid infrastructure design recommendations.

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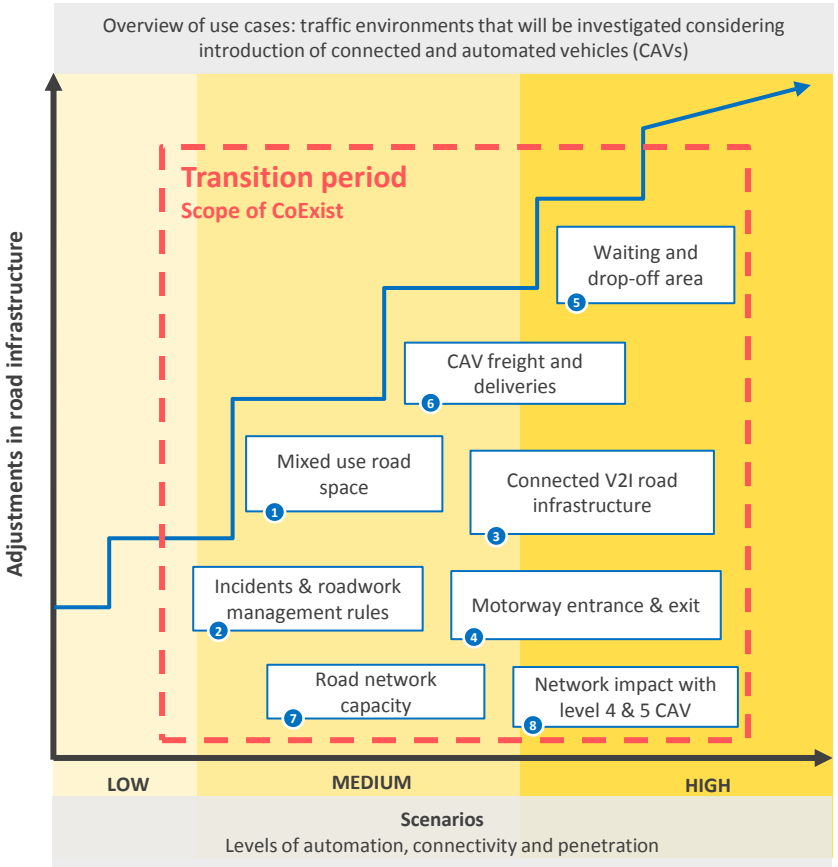
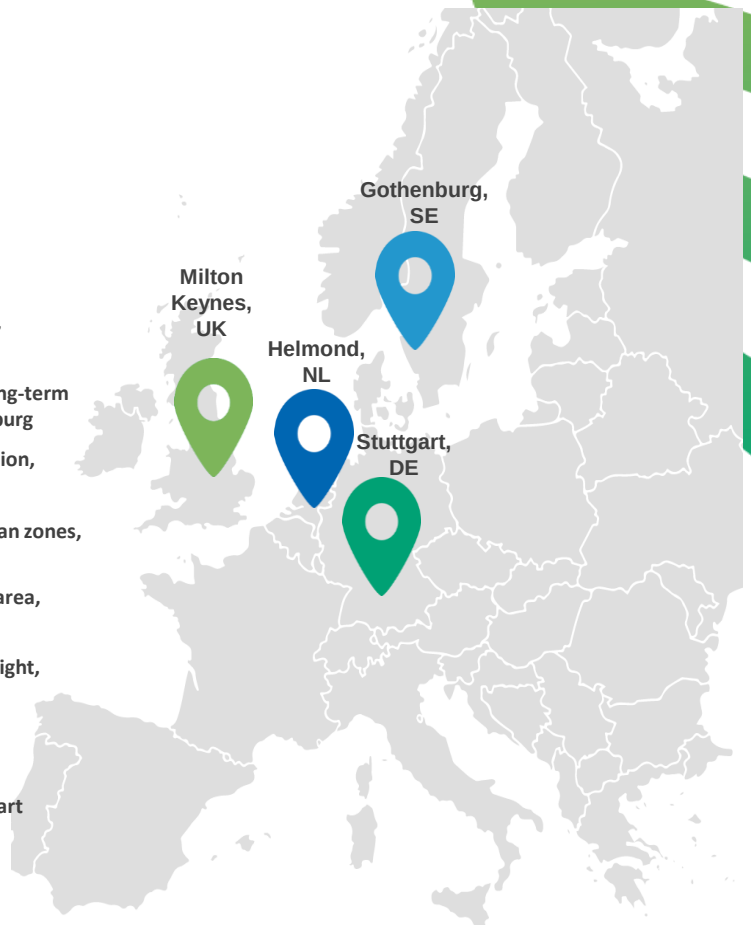
Use Cases



Use cases

1. Mixed use road space, Gothenburg
2. Accessibility during long-term construction, Gothenburg
3. Signalised traffic junction, Helmond
4. Highway and interurban zones, Helmond
5. Waiting and drop-off area, Milton Keynes
6. CAV deliveries and freight, Milton Keynes
7. Road capacity, Stuttgart
8. Driverless cars, Stuttgart



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NEXT GENERATION TRANSPORT
Towards full scale demonstrations

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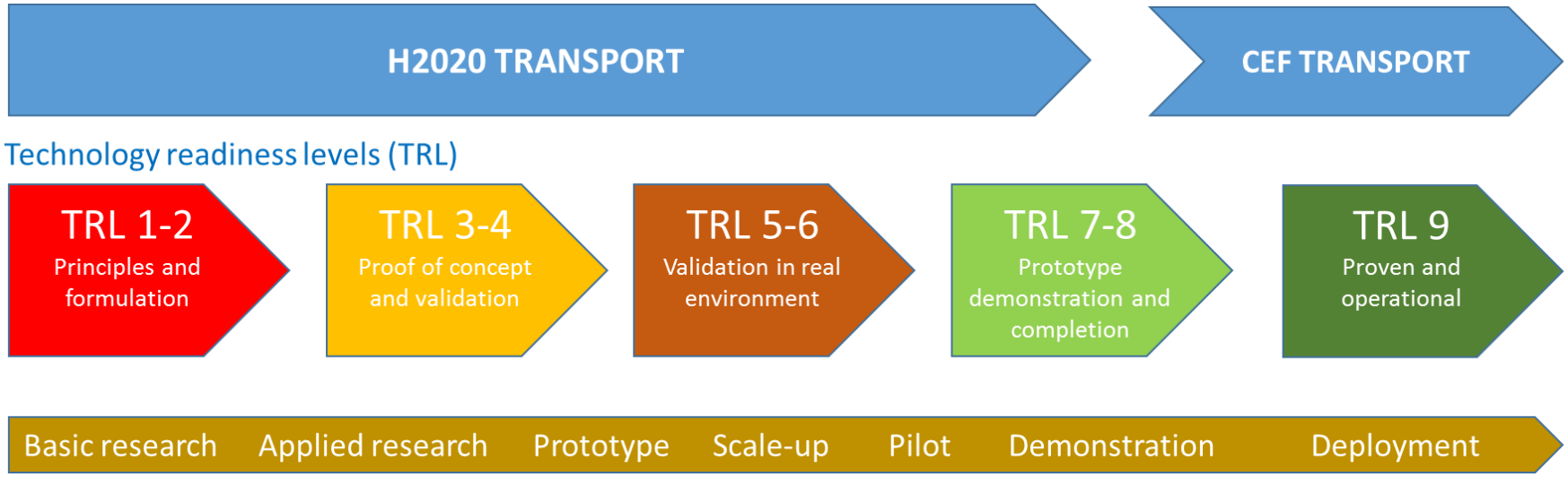
FROM RESEARCH TO LARGE SCALE DEMONSTRATION

Research Institute usually go to TRL 5-6

We now need demonstrations up to TRL 7-8

- **Large scale**
- **In real life conditions**
- **Integrating simultaneously multiple innovations**
  - E.g. Automated vehicle, physical and digital infrastructure, mobility services
- **Involving the real actors of the service chain**



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FROM RESEARCH TO LARGE SCALE DEMONSTRATION

VEDECOM integrates 3 instruments to carry out such demonstrations :

- **Self financed initiatives**
  - On-demand mobility service demonstration in Strasbourg ITS Congress
- **Collaborative projects at national level**
  - EVAPS project: shared and automated mobility service in Paris – Saclay area
- **Collaborative projects at European level**
  - AUTOPILOT project: automated driving progressed by IoT

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ITS STRASBOURG
CROSS-BORDER AUTOMATED ON-DEMAND MOBILITY SERVICE

Service order

Automated driving

Remote Control Center

Service optimization

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ITS STRASBOURG
CROSS-BORDER AUTOMATED ON-DEMAND MOBILITY SERVICE

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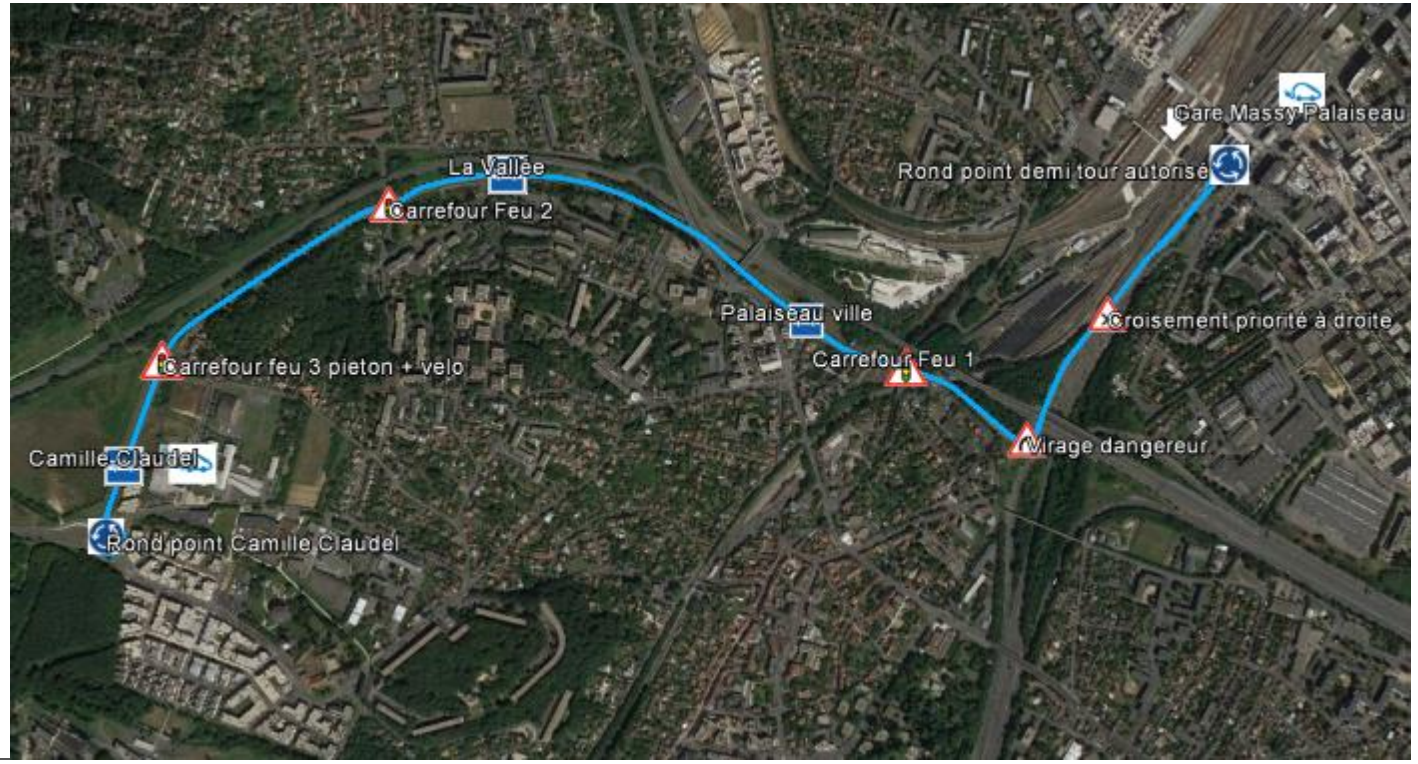
EVAPS PROJECT: SHARED AND AUTOMATED MOBILITY SERVICE IN PARIS – SACLAY

On-demand night service between the Massy multimodal hub and the Paris-Saclay campus

- Automated vehicles
- Dedicated lane shared with buses
- Connected infrastructure



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VEDECOM PREPARES THE SUSTAINABLE MOBILITY FOR ALL

Towards:

- **0 emissions**
- **0 fatalities**
- **0 stress**
- **0 left out** **(free access to mobility)**
- **0 waste** **(energy, time, space)**

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Thank you for your attention

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