HORIZON 2020

PAsCAL PROJECT

Enhance driver behaviour
and Public Acceptance
of Connected
and Autonomous vehicLes

WWW.PASCAL-PROJECT.EU

Luc VANDENABEELE
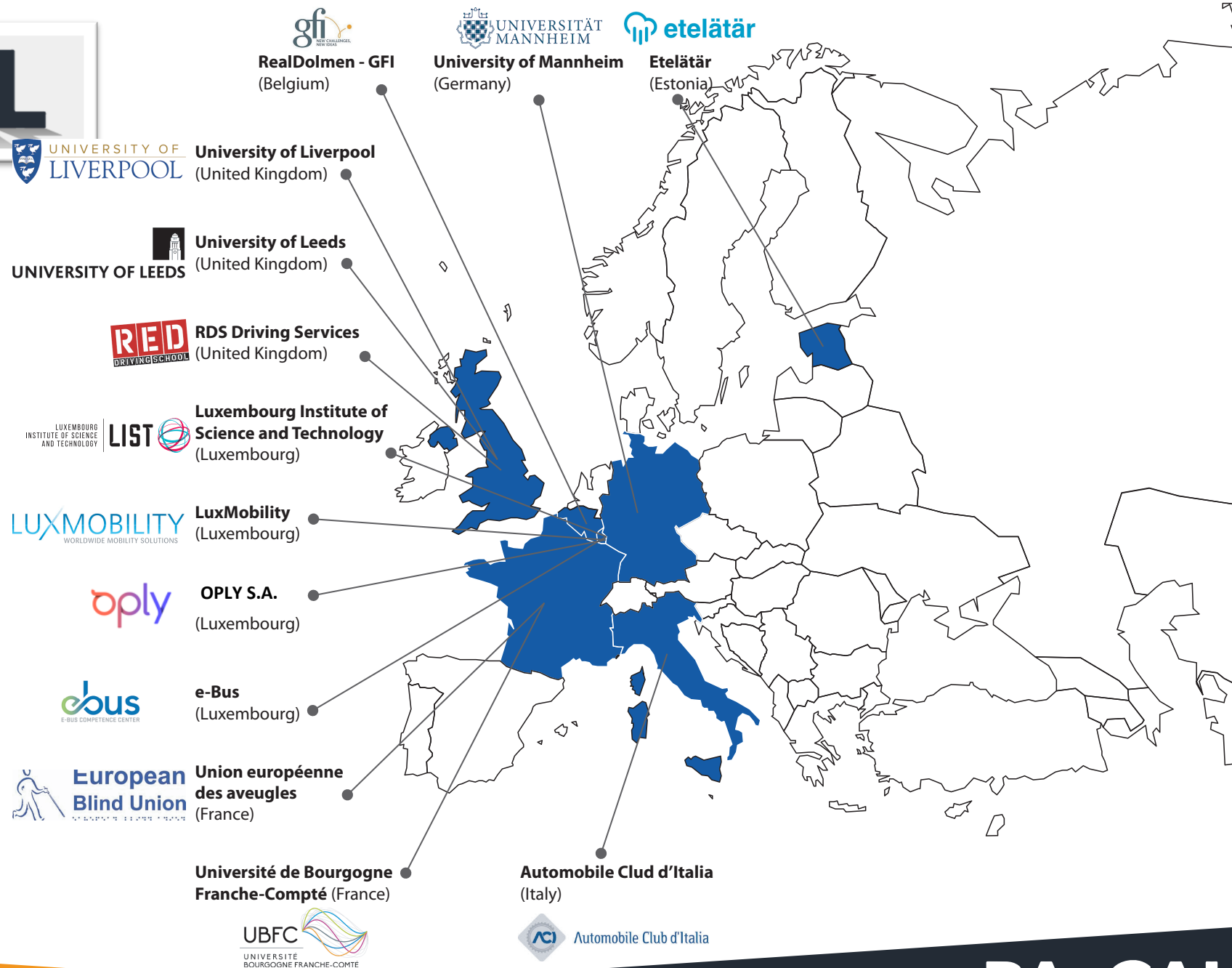
PAsCAL

- Enhance driver behavior and acceptance of connected, cooperative and automated transport

- 13 partners
- 7 countries
- 34 deliverables

- **Start date** 06.01.2019
- **Duration** 36 + 6 months
- **Budget** € 3.974.041,25

RealDolmen - GFI
(Belgium)

University of Mannheim
(Germany)

Etelätär
(Estonia)

University of Liverpool
(United Kingdom)

University of Leeds
(United Kingdom)

RDS Driving Services
(United Kingdom)

Luxembourg Institute of Science and Technology
(Luxembourg)

LuxMobility
(Luxembourg)

OPLY S.A.
(Luxembourg)

e-Bus
(Luxembourg)

Union européenne des aveugles
(France)

Université de Bourgogne Franche-Compté (France)

Automobile Clud d'Italia
(Italy)

PAsCAL

PasCAL

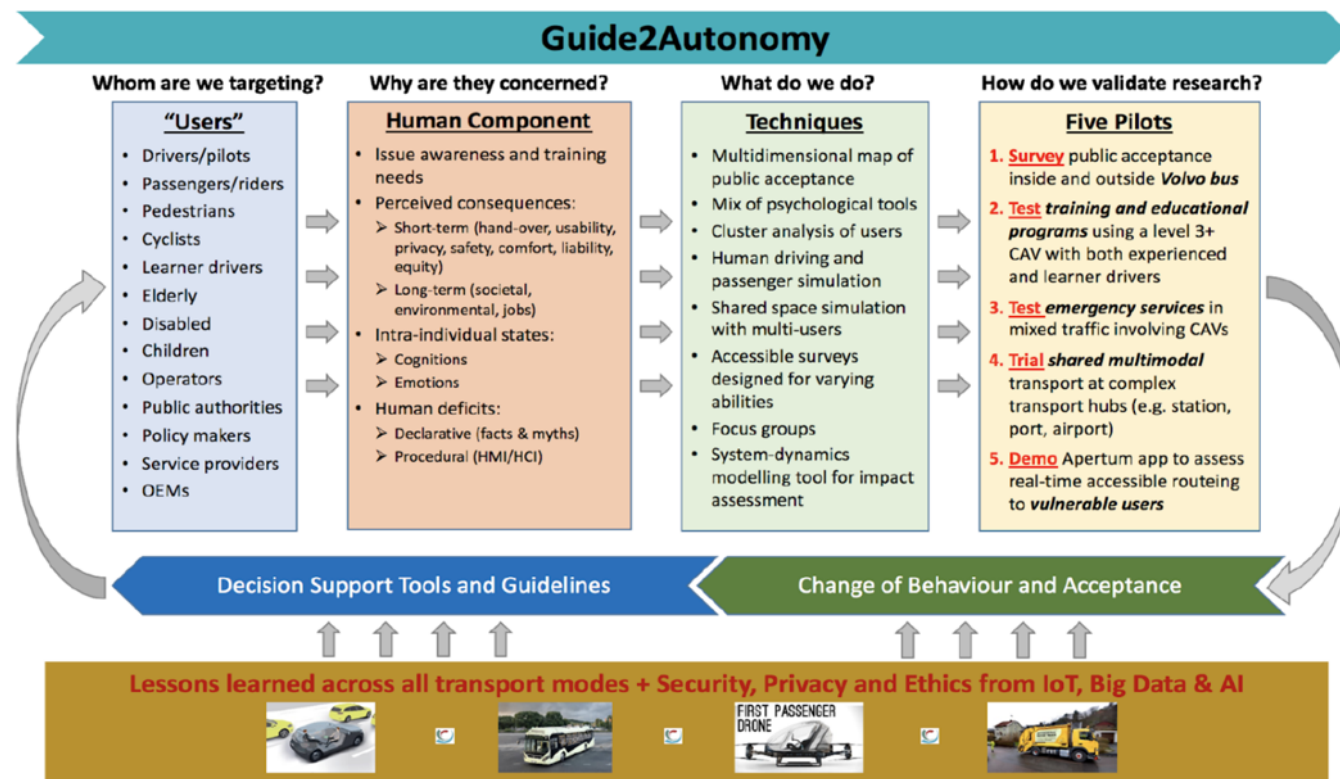- Enhance driver behavior and acceptance of connected, cooperative and automated transport

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SURVEYS

SIMULATORS

TRAININGS

5 PILOT STUDIES

- High-capacity autonomous bus
- Autonomous driving training
- Autonomous bus shuttle line
- Shared connected transport
- Vulnerable travellers

Guide2Autonomy

Guide2Autonomy

A set of guides and recommendations (about 100) that allow the industry, public authorities and other relevant stakeholders an improved understanding of the public awareness and the requirements and needs of different types of users in relation to CAV.

Guide2Autonomy

Whom are we targeting?	Why are they concerned?	What do we do?	How do we validate research?
"Users"	**Human Component**	**Techniques**	**Five Pilots**

• Drivers/pilots
• Passengers/riders
• Pedestrians
• Cyclists
• Learner drivers
• Elderly
• Disabled
• Children
• Operators
• Public authorities
• Policy makers
• Service providers
• OEMs
	• Issue awareness and training needs
	• Perceived consequences:
	  ➤ Short-term (hand-over, usability, privacy, safety, comfort, liability, equity)
	  ➤ Long-term (societal, environmental, jobs)
	• Intra-individual states:
	  ➤ Cognitions
	  ➤ Emotions
	• Human deficits:
	  ➤ Declarative (facts & myths)
	  ➤ Procedural (HMI/HCI)
		• Multidimensional map of public acceptance
		• Mix of psychological tools
		• Cluster analysis of users
		• Human driving and passenger simulation
		• Shared space simulation with multi-users
		• Accessible surveys designed for varying abilities
		• Focus groups
		• System-dynamics modelling tool for impact assessment
			1. **Survey** public acceptance inside and outside *Volvo bus*
			2. **Test** *training and educational programs* using a level 3+ CAV with both experienced and learner drivers
			3. **Test** *emergency services* in mixed traffic involving CAVs
			4. **Trial** *shared multimodal* transport at complex transport hubs (e.g. station, port, airport)
			5. **Demo** Apertum app to assess real-time accessible routeing to *vulnerable users*

Decision Support Tools and Guidelines

Change of Behaviour and Acceptance

Lessons learned across all transport modes + Security, Privacy and Ethics from IoT, Big Data & AI

Exploitation model

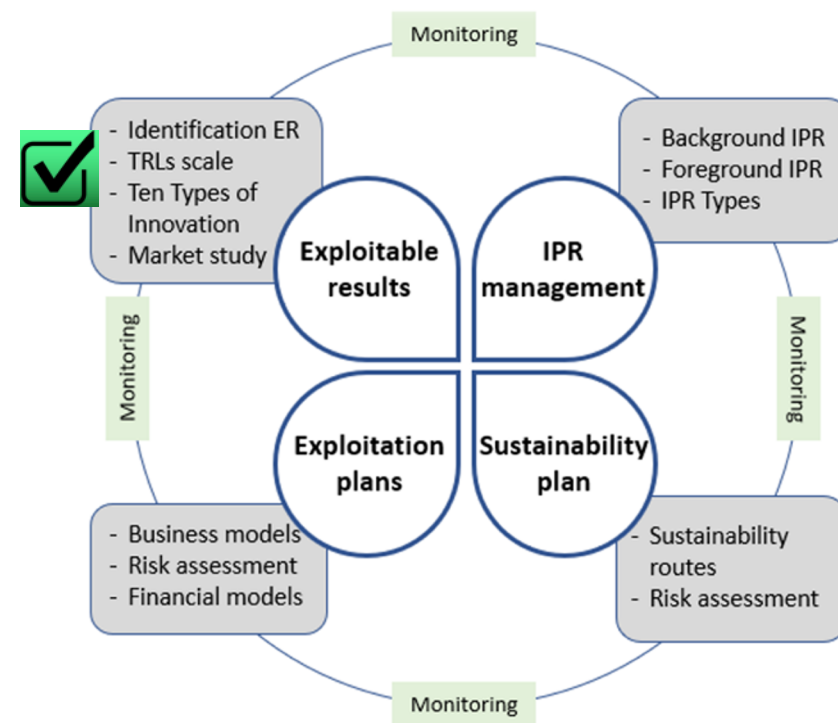To facilitate the successful exploitation and adoption of results and benefits within stakeholders

Figure 2 - PAsCAL project exploitation activities

Thanks for your attention

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