SIP-Adus Workshop 2019

Automated Road Transport - R&I actions

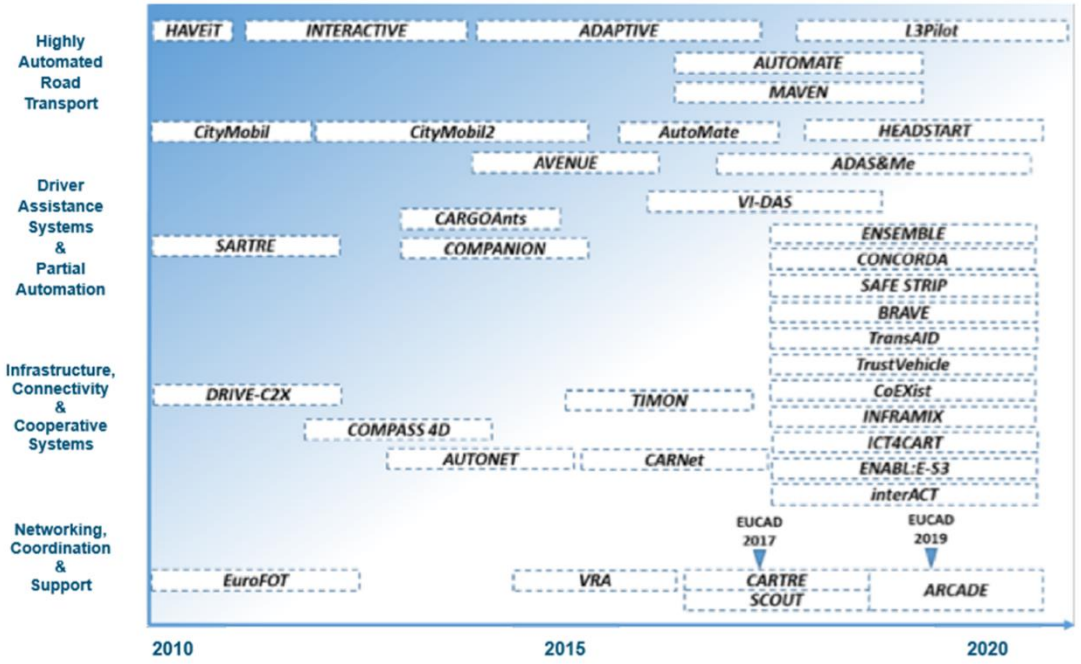
Tokyo, 12 November 2019

Ludger Rogge
Directorate-General for Research & Innovation

European Commission

HORIZON 2020

H2020 - Calls on "Automated Road Transport"



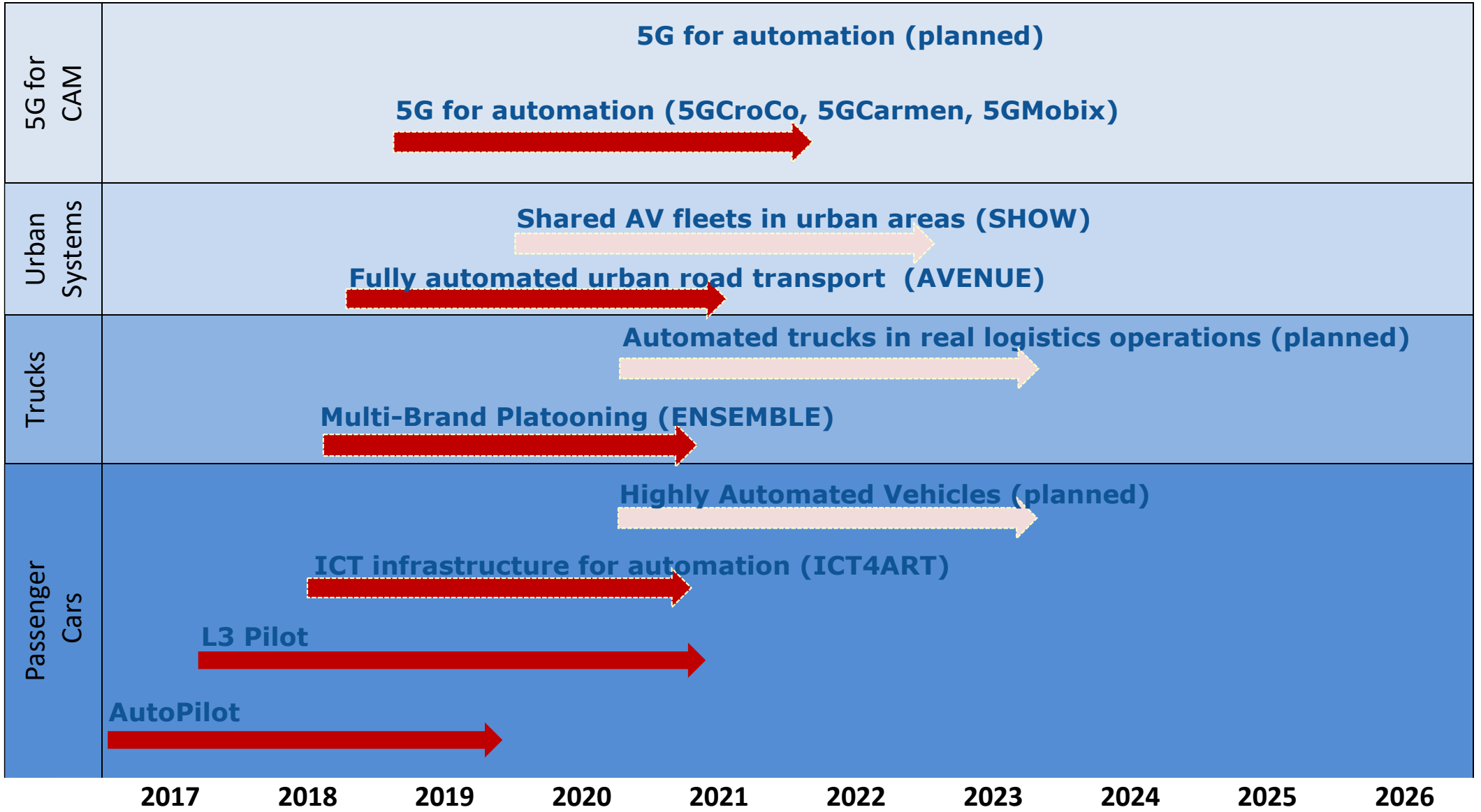
- Budget: € 300 Mio (2014-2020)
- Focus
  - Large-scale demos of automated driving systems for passenger cars, trucks and urban transport
  - Safety and end user acceptance
  - Road infrastructure to support automation
  - Traffic management solutions
  - Connectivity for automation
  - Testing and validation procedures
  - Assessment of impacts, benefits and costs of CAD systems
  - Human centered design of AV
  - Support for cooperation and networking activities

More information on all H2020 ART projects:
https://ec.europa.eu/inea/en/horizon-2020/automated-road-transport

5 Calls for proposals

2016 → 2017 → 2018 → 2019 → 2020

H2020 – Ongoing and planned large-scale demos



L3 Pilot

- Test and evaluate AD functions at SAE Level 3 and 4
- Tested functions cover wide range from parking to overtaking, and urban intersection driving.
- Cross-border tests are planned for automated driving systems on highways (e.g. traffic jam assist, highway assist)

https://www.l3pilot.eu

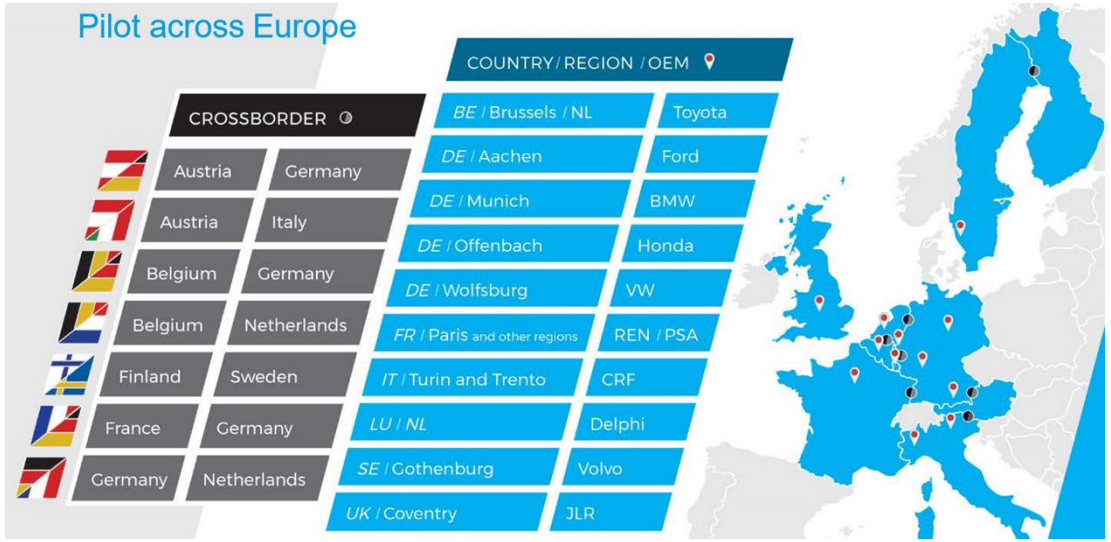
€68 million BUDGET

48 months DURATION, starting in September 2017

€36 million FUNDING

34 PARTNERS, among them OEMs, suppliers, research, SMEs, insurers, authorities and user groups

12 COUNTRIES involved: Austria, Belgium, France, Finland, Germany, Greece, Italy, Netherlands, Norway, Sweden, Switzerland, UK



L3 Pilot – Status: pilot execution

COUNTRY / REGION / PARTNER	
BE / Brussels	Toyota
DE / Aache	
DE / Munic	
DE / Offenb	
DE / Wolfsb	
DE / Ingolstadt	
FR / Paris ar	
IT / Turin ar	
LU / NL	
SE / Gothen	
UK / Coventry	JLR
+ Cross-border activities	

Piloting is running on public roads: thousands of km in urban & motorway scenarios collected

First cross border tests planned

Users' feedback collected with a consolidated and shared methodology

Common data format and database developed and published

Data delivery for the impact assessment has started

Permission to drive on public roads not issued in all EU countries yet

AVENUE

- Test innovative PT services with automous vehicles
- Full-scale demonstrations of fleets of autonomous mini-buses in low to medium demand areas
- 4 validation sites – what is about to come (all sites operate on open street, mixed traffic, with regular time schedule)

- **Geneva – TPG** (December 2019) Bell-Idee
  - On-demand, door-to-door, fleet of 3 vehicles
- **Lyon – Keolis (November 2019) Groupama Stadium**
  - Complex roads, hi-speed traffic, V2X, on demand
- **Luxembourg – Sales-Lentz (Q3 2020) Contern**
  - Complex road, link to train services, on-demand
- **Copenhagen – Holo (Q2 2020) – Nordhaven**
  - Multimodal mobility, on-demand

- **Coordinator: University of Geneva**
- **Consortium: 16 Partners**
- **Budget: 20 M€**
- **Start date: 1 May 2018**

https://h2020-avenue.eu/

SHOW

Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas

- **Real life demonstrations of shared, connected, cooperative, electrified fleets of autonomous vehicles in 20 cities across Europe**
- **Large fleet of AVs of all types (buses, shuttles, pods, robo-taxis, cargo vehicles) will be tested on dedicated lanes and in mixed traffic**
- **International cooperation**
  - 11 external stakeholders from US, Singapore, Australia, China, South Korea and Taiwan declared interest to support and collaborate
    - Exchange know-how, lessons learned/best practices
    - Common architectures and KPIs
    - Exchange specific data sets

- **Coordinator: UITP**
- **Consortium: 69 Partners from 12 EU Countries + Switzerland**
- **Budget: Approx. 36 M€**
- **Start date: late 2019**

ENSEMBLE – Enabling Safe Multi-Brand Platooning in Europe

ENSEMBLE

Project Objectives

- To pave the way for the adoption of multi-brand truck platooning in Europe, by
  - Demonstrating differently branded trucks in one platoon
    - Under real world traffic conditions
    - Across (national) borders
  - Aligning and working on standardization
  - Assessing impacts on traffic safety, throughput and fuel economy

https://platooningensemble.eu/

3 ICT 5G cross-border corridor projects

- **Launched in November 2018, 36 months duration**
- **Combined budget of €63M, of which 79% funded under H2020**
- **Cover 1,000+km highways crossing 8 borders**
- **Test and demonstrate 5G-enabled CAM applications**
  - Tele operated driving
  - Generation and Distribution of High Definition Maps
  - Anticipated Cooperative Collision Avoidance
  - vehicle manoeuvre negotiation (at various levels of automation),
  - infotainment,
  - emission control

HADRIAN

Human centred design for the new driver role in highly automated vehicles

- **Develop a holistic approach to ensure a smooth and safe interaction between the automated vehicle and their driver and users**
- **Focus on design of dynamically adjusting HMI concepts taking environmental and driver conditions into account**
- **Demonstrations of HMI concepts for light to larger passenger vehicles and freight vehicles/trucks**
- **International cooperation**
  - Twinning with US (Virginia Tech Transportation Institute)
  - Twinning with Japan (AVL Japan)

- **Coordinator: Virtual Vehicle (AT)**
- **Consortium: 16 Partners from 8 EU Countries & Turkey**
- **Budget: 8 M€**
- **Start date: late 2019**

H2020 - Call on "Automated Road Transport » - Year 2020 - new opportunities for International Cooperationj

Opening: 3 December 2019

Closing: 21 April 2020

Efficient and safe connected and automated heavy commercial vehicles in real logistics operations

Large-scale, cross-border demonstration of highly automated driving functions for passenger cars

2020 Call

H2020 Calls "Automated Road Transport" International Cooperation

- All Horizon 2020 projects can include international partners
  - **Applicants from non-EU countries are eligible to take part in Horizon 2020 programmes, even as coordinator**
- R&I topics for International Cooperation
  - **Cooperation with projects or partners from the US, Japan, South Korea, Singapore, and/or Australia is encouraged**
- Twinning

Efficient and safe connected and automated heavy duty vehicles in real logistics operations

Topic DT-ART-05-2020(RIA)

❑ Scope

- Identify logistics operational needs and emerging business and operating models
- Develop, design, test and validate enhanced connected and automated vehicle technologies for heavy commercial vehicles
- Test and demonstrate innovative, efficient and safe connected and automated heavy commercial vehicles for real logistics operations on hub-to-hub corridors, on open roads in mixed traffic or in confined areas
- Enhanced interaction between automated heavy commercial vehicles and their users and other vulnerable road users

❑ Estimated EC contribution per proposal:

- EUR 15-20 Mio

Large-scale, cross-border demonstration of connected and highly automated driving functions for passenger cars

Topic DT-ART-06-2020(RIA)

❑ Scope

- Demonstrate highly automated driving technologies and systems for passenger cars (SAE level 4) for different use cases in particularly challenging and complex environments that are expected to be introduced into the market after 2020
- Test innovative connectivity technologies
- Conduct cross-border demonstrations to ensure that new services and systems are compatible and interoperable at European level
- Develop and test solutions for smooth communication and interaction between automated vehicles and their users and other (vulnerable) road users

❑ Estimated EC contribution per proposal:

- EUR 15-30 Mio

Rethinking transport
Towards clean and inclusive mobility
27–30 April 2020

TRA 2020
TRANSPORT RESEARCH ARENA
HELSINKI

Hosted and organised by:

MINISTRY OF TRANSPORT AND COMMUNICATIONS
TRAFICOM Finnish Transport and Communications Agency
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BUSINESS FINLAND
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Rethinking transport
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