



# *EU Regulatory Approach to Connected and Automated Vehicles Approval*

**EUCAD2021 Conference**  
**20-22 April, 2021**

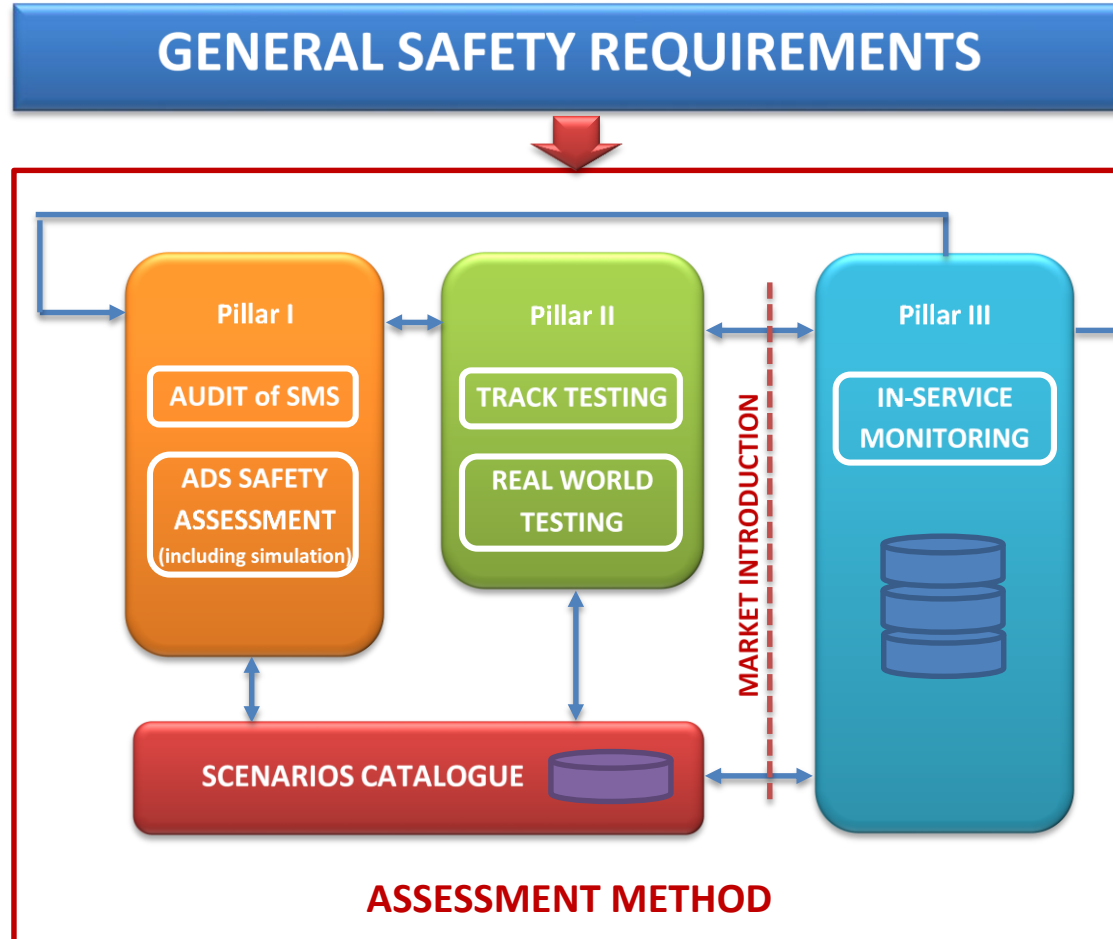
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# EU approach to automated driving

- Progressive approach to regulate CAVs:
  1. EU supporting **Large scale Testing** (new EU platform to coordinate testing across EU)
  2. **EU Guidelines** for approval under an EU exemption procedure (Art. 39 Regulation (EU) 858/2018)
  3. New EU legal framework (**General Safety Regulation** ([Regulation \(EU\) 2019/2144](#)) applicable from July 2022 (technical rules by 2021)
  4. New assessment method
- Focus on **SAE levels 3-4 (automated vehicles)**



# New Assessment method

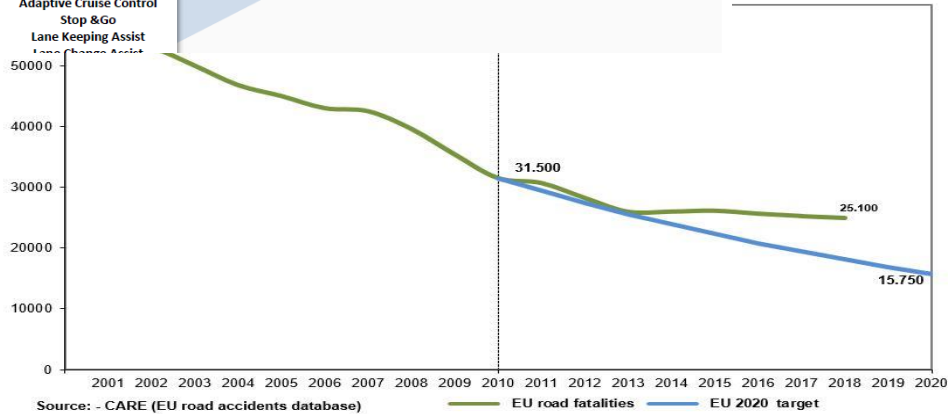
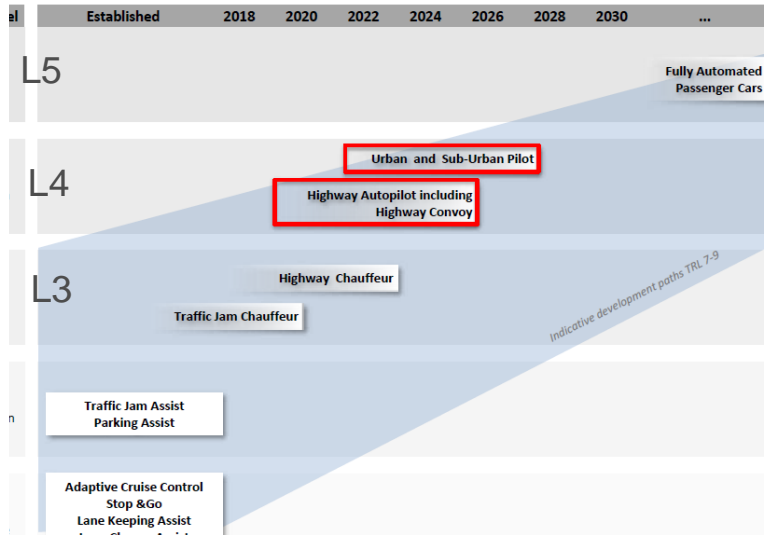


- I. **AUDIT** of the manufacturer Safety Management System (processes) & **ASSESSMENT** of the ADS design and validation
- II. Confirmation of the audit/check minimum performances before the vehicle is placed on the market through physical **TRACK & ONROAD TESTING** : to confirm capability to cope with emergency (track) and normal (on-road) operation.
- III. **IN-SERVICE MONITORING** after the vehicle is placed on the market: (1) safety confirmation, (2) scenarios generation, (3) safety recommendations through feedback loop from the **OPERATIONAL EXPERIENCE**

**Scenario database** as common framework for manufacturers and authorities

# EU vision on Automated Driving Deployment

## ERTRAC CAD Roadmap 2019



Today

2025

2030

2050

2021-2024: Robot taxis/ shuttles (level 4) first commercial services.



Vehicles levels 1-2 (driver assist) available on the EU market

2024-2026 All new vehicles on EU market equipped with level 1 (EU law) or 2.

2021: First "highway chauffeur" (level 3) to go on the EU market



Major uptake of level 4 passenger cars on motorways

First level 3/4 trucks on motorways



Major uptake of Robot taxi/ shuttles in cities, level 4

Major uptake of level 4 trucks on motorways

Zero fatalities  
Mobility services  
Competitiveness

# Current Status

	General Framework	Motorway	Urban
EU	<p><b>EC Guidelines (Feb 2019)</b> Approval of AVs under EU exemption procedure</p>		<p><b>MVWG-ACV (2021)</b> Shuttles and robotaxi (valet parking, commercial vehicles in confined areas)</p>
	<p><b>EC</b> contributing to FRAV works and leading the work in VMAD SG2 and 3</p>	<p><b>EC</b> co-leading ALKS SIG</p>	<p><b>EC Impl. Regulation</b> ADS Type Approval</p>
UNECE	<p><b>UNR155 on Cybersecurity (June 2020)</b></p>	<p><b>UNR157 on ALKS low speed (June 2020)</b></p>	
	<p><b>UNR156 on OTA updates (June 2020)</b></p>	<p><b>ALKS SIG (2021)</b> Amendment to extend scope of UN R157 (include lane change, high speed, commercial vehicle, ...)</p>	
	<p><b>FRAV IWG (?)</b> Functional Requirements</p> <p><b>VMAD IWG (?)</b> Validation Methods</p>		

+ Need to amend national/regional legislation (e.g., liability, traffic rules)

# Way Forward

- **Car motorway applications beyond 60 km/h including lane change (2021)**
- MVWG-ACV subgroup
  - **Shuttles/robotaxi**
  - **EU text in parallel**
  - TO FOLLOW: truck motorway, valet parking, ADAS
- **UN PROCESS** top-down generic process (VMAD/FRAV)

# Thank you

## ACKNOWLEDGEMTS

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