



Coordination and Collaboration towards Automated Driving

Future Networked Car Symposium

FNC-2022

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22 March 2022



Coordination and Collaboration

Government Authorities' Coordination is needed in order to develop harmonised and interoperable solutions

Collaboration among stakeholders is key to overcoming the hurdles of developing safe *automated driving*

Coordination at different levels



- Global
- Regional
- Country
- Local



Coordination at UNECE and EU Level

New EU Vehicle safety regulation

- Adopted on 27 November 2019 and applicable from 6 July 2022
- Mandates several driver assistance systems
- Provides the legal framework for Connected and Automated Driving
- Implementing measures for automation developed both at EU and UNECE level:

Level 4



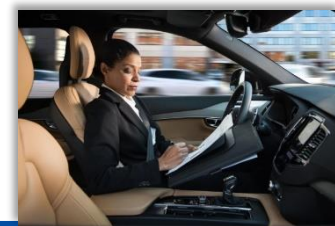
- Focus on autonomous shuttles/robot taxis produced in small series
- New concepts: Overall safety target, standard scenarios testing, audit of the safety by design, in-service monitoring.
- Q2/2022
- Will serve to discuss a future regulation in UNECE
- Member states still responsible for traffic rules and transport licencing



Levels 2 and 3



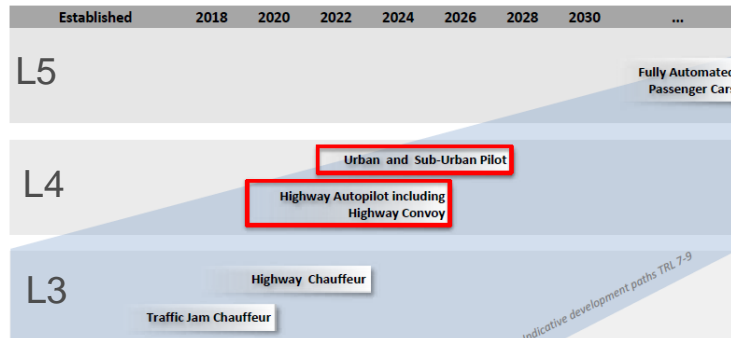
- Level 2: UN Regulation being developed.
- Level 3: UN Regulation on traffic jam pilot (adopted) and highway Chauffeur (Q2/2022)
- UN Regulations to be part of EU legislation
- Guidelines on other use cases (e.g. Level 4) being developed



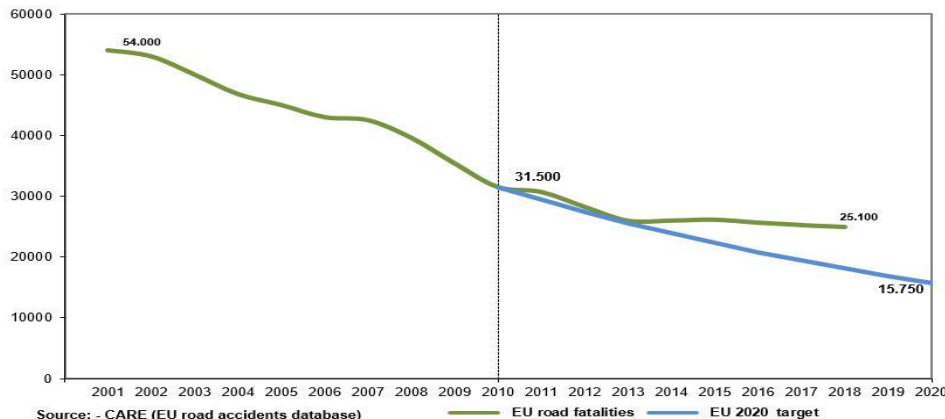
+ General approach for all levels being developed at UNECE (FRAV and VMAD Guidelines)

Coordination between Regulators and Industry

ERTRAC CAD Roadmap



Still too many road fatalities on EU roads. 90% of accident involve human errors



Today

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

2025

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



2030

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

2050

Zero fatalities
Mobility services
Competitiveness

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



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

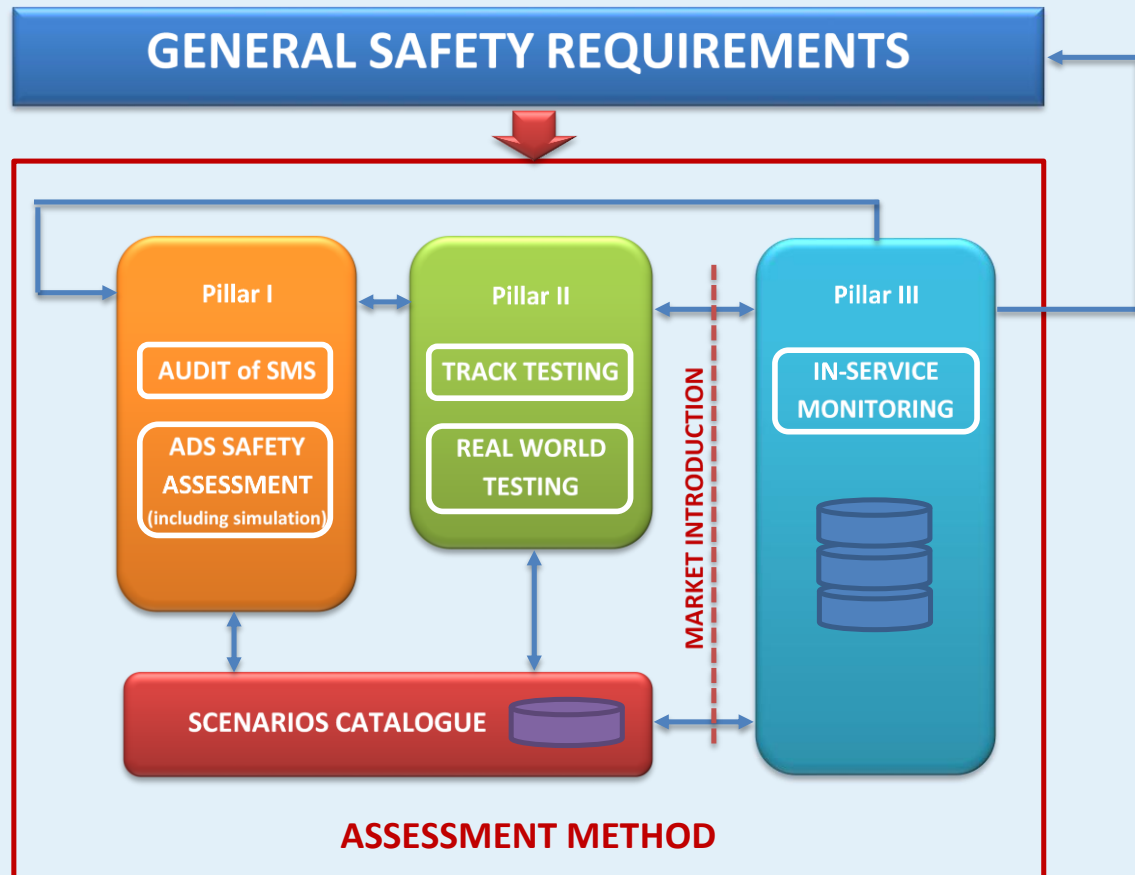
Major uptake of level 4 passenger cars on motorways

First level 3/4 trucks on motorways



Major uptake of level 4 trucks on motorways

EU Approach to Automated Driving

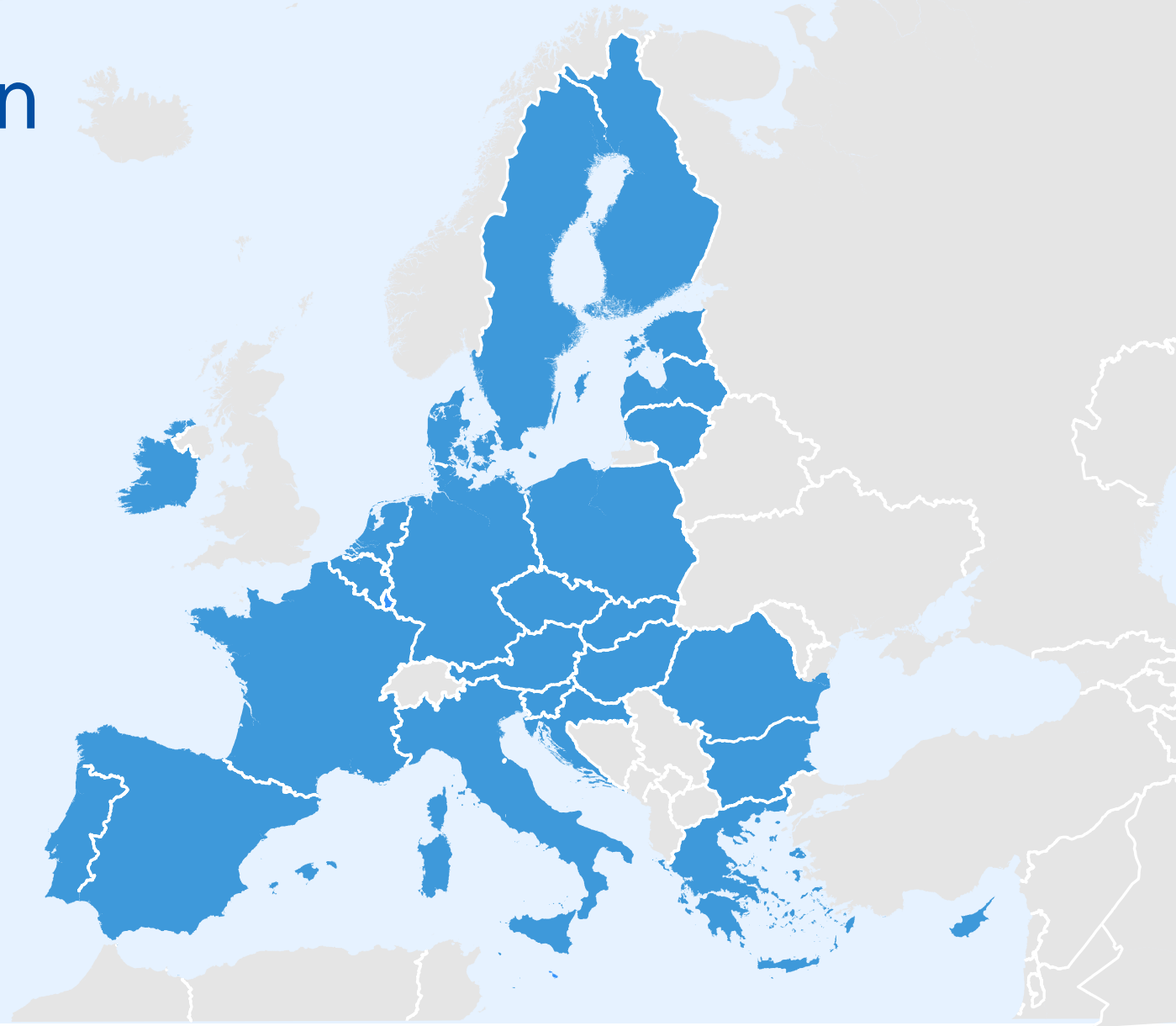


- I. **AUDIT** of the manufacturer Safety Management System (processes) & **ASSESSMENT** of the ADS design and validation
- II. Confirmation of the audit/check minimum performances before the vehicle is placed on the market through physical **TRACK & ONROAD TESTING** : to confirm capability to cope with 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

Coordination between Member States

- New competences to be developed
- Technical Guidelines and trainings
- Exchange of expertise and safety recommendations between



0 250 500 1,000 Km

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Existing Gaps

GENERAL: Taxonomy, approval process, safety level, scenarios

AUDIT: Guide on SMS, criteria for audit and competences

ADS SAFETY ASSESSMENT: methodologies for risk analysis, standard reporting, new competences for authorities

TESTING: testing procedures, BPGs for selection and use of tools, validation

IN-SERVICE MONITORING: Reporting criteria and obligations; Responsibility for data collection, storage, analysis; data access and privacy; safety recommendations

HMI, Connectivity, Infrastructure, traffic rules

What can we learn from other sectors?



Taxonomy; safety requirements; design; HMI and interaction; type approval process; ECCAIRS



Guide, certification and monitoring SMS; infrastructure and infrastructure managers; maintenance



Scenarios selection; risk assessment tools, PSA; safety analysis report; EU Clearinghouse

Collaboration is essential to tackle the high complexity of AVs technology, both within and outside the automotive sector



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Guiding principle that safety is of global concern and its improvement should not be limited by geographical or organizational borders

(ECCAIRS website)

Keep in touch



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Thank you



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Slide 2: Photo by Diva Plavalaguna from Pexels; slide 3: PNG ALL.