



# Paving the way to driverless vehicles in Europe

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*M. Cristina GALASSI (DG GROW)  
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# EU General Safety Regulation (EU) 2019/2144

## NEW RULES ON VEHICLE SAFETY AND AUTOMATED MOBILITY *6<sup>th</sup> July 2022*

PRESS RELEASE: [New Vehicle General Safety Regulation \(europa.eu\)](https://europa.eu)



Further measures to be progressively introduced between  
**JULY 2024 TO JULY 2029**

# The new EU type approval framework for connected and automated vehicles

**AUTOMATED  
VEHICLES  
I) UN R157**



## KEY CHARACTERISTICS:

- Driver present
- Automated driving mode limited to motorways up to 60 km/h, up to 130km/h from January 2023
- No limitation to size of vehicle series
- Cybersecurity measures

**FULLY DRIVERLESS  
VEHICLES  
II) EU ADS Reg**



## KEY CHARACTERISTICS:

- No driver present
- Automated driving permitted in defined areas
- Limit on size of vehicle series to max.1500 vehicles per model per year (review of limit 2025)
- Allowed from September 2022

# I) Automated Vehicles:

## UN Regulation 157 (2020, amended 2022)

- In June 2020 UNECE WP.29 adopted the **Regulation on Automated Lane Keeping Systems (ALKS) for low-speed highway applications** (“*traffic-jam pilot*”), the first regulation setting technical requirements for Level 3 vehicle automation\*
- In force since January 2021, it applies to passenger cars and vans. From June 2022 it applies also to trucks, buses and coaches
- **First amendment** adopted in June 2022 for scope extension to high speed and lane change (“*highway chauffer*”)
- World’s first internationally valid ALKS approvals granted by Germany and Japan in 2021

\* <https://unece.org/transport/press/un-regulation-automated-lane-keeping-systems-milestone-safe-introduction-automated>

## II) Driverless vehicles: the new **EU ADS Regulation** (2022)

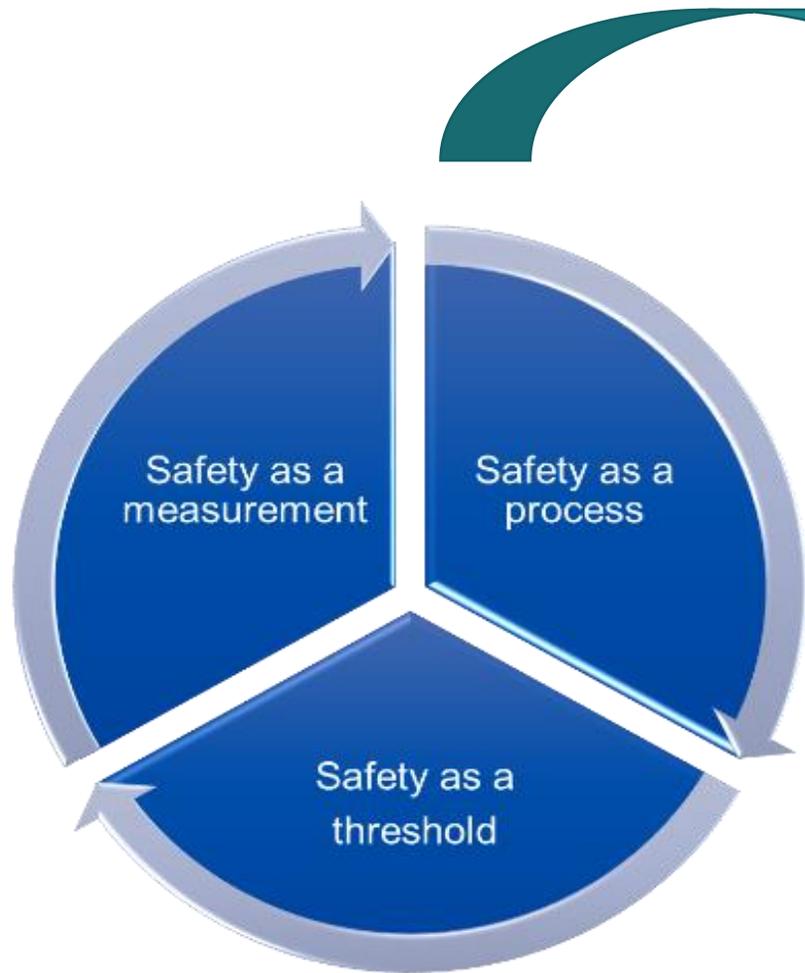
**Commission Implementing Regulation** laying down rules for the application of Regulation (EU) 2019/2144 of the European Parliament and of the Council as regards uniform procedures and technical specifications for the type-approval of motor vehicles with regard to their automated driving system (ADS)

### **ANNEXES** to the Commission Implementing Regulation

- 1) Information Document
- 2) Performance Requirements
- 3) Compliance Assessment
  - PART 1 Traffic Scenarios
  - PART 2 Audit of SMS and safety assessment
  - PART 3 Tests
  - PART 4 Guidelines for the credibility assessment
  - PART 5 In-service reporting
- 4) EU Type approval certificate

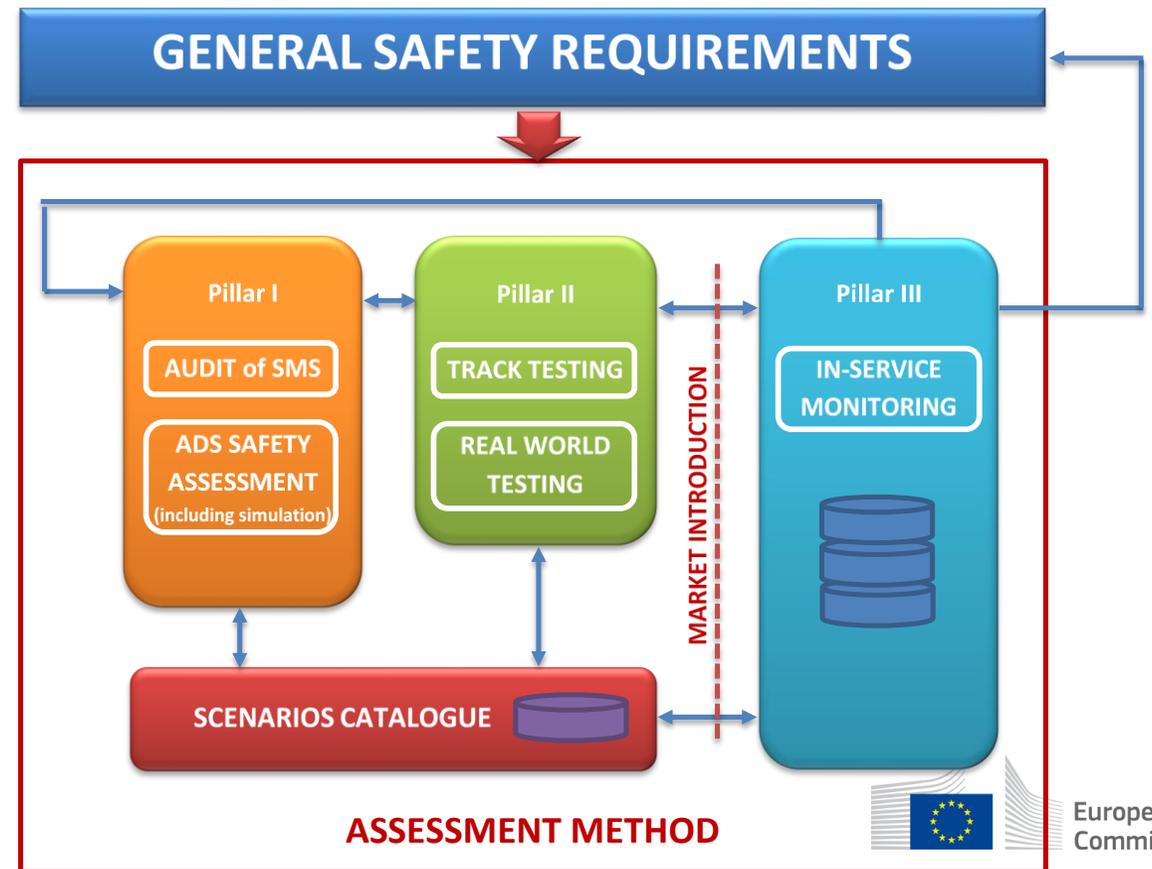
[Commission Implementing Regulation \(EU\) 2022/1426](#)  
[of 5 August 2022](#)

# Innovative approach



Safety Requirements

## New Assessment Method



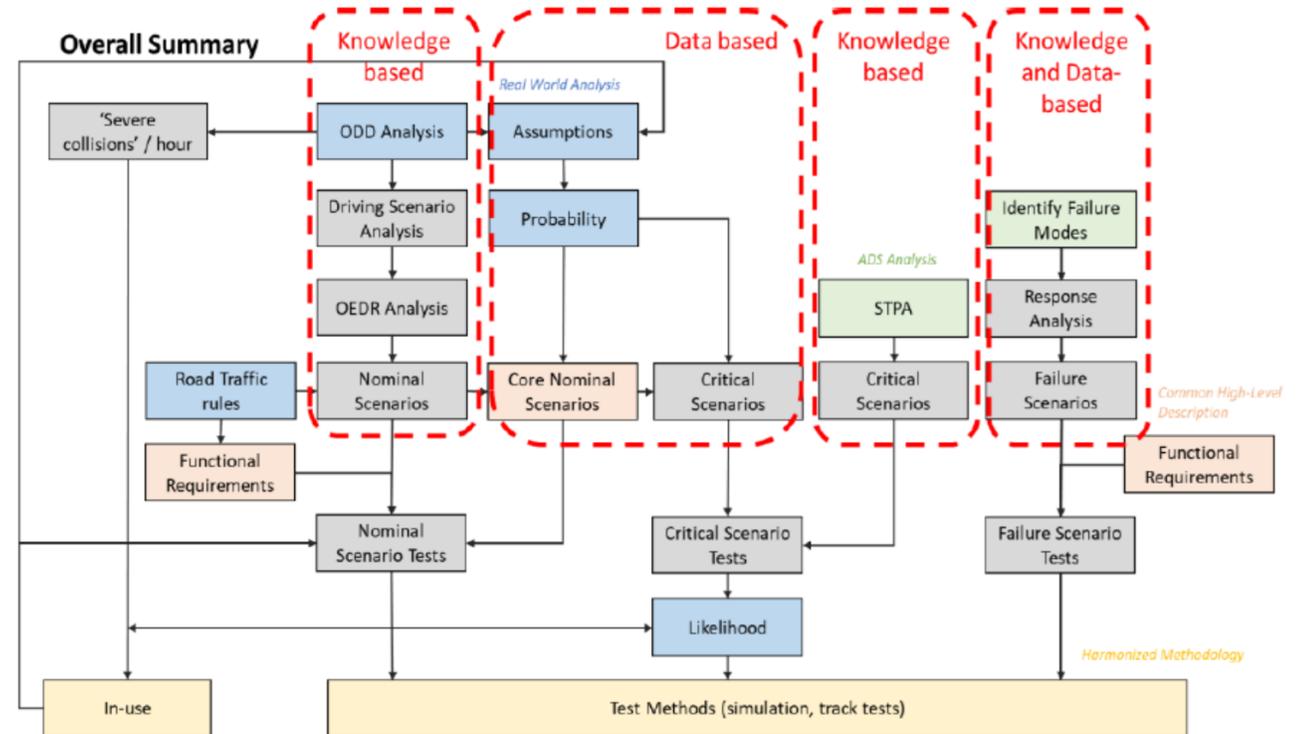
# Annex III – Compliance Assessment

## PART 1: Scenarios

Minimum set of scenarios

- Lane change
- Crossing, turning
- Emergency manoeuvre
- Pedestrian/cyclist crossing (urban&rural, motorway)
- Hub-to-hub (motorway entry, exit, toll station, ...)

**Appendix 1:** Methods to generate scenarios relevant to the ADS ODD and not covered in PART 1



# Annex III – Compliance Assessment

## PART 2 – Audit of the SMS and Safety Assessment

### AUDIT

The Manufacturer shall demonstrate that effective processes, methodologies, training and tools are in place, up to date and being followed within the organization to manage the safety and continued compliance throughout the ADS lifecycle.

### SAFETY ASSESSMENT

The manufacturer shall provide a documentation package which gives access to the design and validation of the ADS.

**SAFETY  
CULTURE**



# Annex III – Compliance Assessment



## PART 3 – Physical Testing

- These tests shall confirm the minimum performance requirements
- Tests scenarios to assess the performance of the ADS **on a test track** (e.g. lane keeping and changing, response to road infrastructure, collision avoidance, cut-in, etc...)
- The ADS shall also be tested **on-road** in accordance with the applicable law of the Member State granting the type-approval and provided that tests can be carried out safely and without any risk to other road users.

# Annex III – Compliance Assessment

## PART 4 - CREDIBILITY ASSESSMENT

- Provides a general description of the main aspects considered for assessing the credibility of a M&S solution together with guidelines of the role played by third parties assessors in the validation process with respect to credibility.
- Team's Experience and Expertise is also assessed
- **“Simulation Handbook”** providing evidence of the credibility assessment

# Annex III – Compliance Assessment



## PART 5 – IN-SERVICE REPORTING

The manufacturer shall report relevant occurrences during ADS operation:

- within one month: short-term report, on occurrences which needs to be remedied by the manufacturer → to the type-approval authorities, market surveillance authorities and the Commission

every year: periodic report, to provide evidence of the ADS performance on safety relevant occurrences in the field → to the type-approval authority that granted the approval

OCCURRENCE	SHORT-TERM REPORTING	PERIODIC REPORT
<b>1. Occurrences related to the ADS performance of the DDT, such as:</b>		
1.a. Safety critical occurrences known to the manufacturer	x	x
1.b. Occurrences related to ADS operation outside its ODD	x	x
1.c. Occurrences related to ADS failure to achieve a minimal risk condition when necessary	x	x
1.d. Communication-related occurrences (where connectivity is relevant to the ADS safety concept)		x
1.e. Cybersecurity-related occurrences		x
1.f. Interaction with remote operator(if applicable) related to major ADS or vehicle failure		x
<b>2. Occurrences related to ADS interaction with fully automated vehicle users, such as:</b>		
2.a. User-related occurrences (e.g. user errors, misuse, misuse prevention)		x
<b>3. Occurrences related to ADS technical conditions, including maintenance and repair:</b>		
3.a. Occurrences related ADS failure resulting in a request to intervene to the operator or the remote intervention operator		x
3.b. Maintenance and repair problems		x
3.c. Occurrences related to unauthorized modifications (i.e. tempering)		x
<b>4. Occurrences related to the identification of new safety-relevant scenarios</b>	x	x

# Ongoing work

1. Interpretation Document & Technical Guidance
2. Exchange on implementation at national level
3. Automated Valet Parking Annex

# 1. Interpretation Document

- **Interpretation Document for Regulation 2022/1426**
  - Including Technical Guidelines on selected topics (e.g., ODD description, Scenario generation & coverage, safety threshold & acceptance criteria, etc.) based on identified priorities
  - not to add or modify requirements
- The aim is to
  - **Facilitate the harmonized implementation of the regulation across MSs**
  - **Ensure the highest common level of safety in the EU**
  - **Promote the EU single market & level playing field**

## 2. Implementation at national level



Automated driving possible in EU, 2 phases

1. EU Type Approval
2. Transport licensing
  - Selection of suitable path/area for operation (within ODD)
  - Pre-deployment testing
  - Transport service licensing (testing, risk assessment, infrastructure, connectivity, ...)
  - Remote Control Centre
  - Monitoring, data collection and analysis

# 3. AVP Annex

- Additional requirements on automated valet parking (AVP) use-case
- Based on
  - “Technical Requirements Catalogue (TRC) for AVP” released October 2022
  - ISO 23374 - Automated valet parking systems (AVPS)

➔ **Lift the small series limitation on AVP type approval**



# Concluding remarks

- ADS type approval already possible in EU (2 phases)
  - Coordination EU/National/Local level
- Guidance for harmonized implementation:
  - Interpretation Document to ensure a single regulatory process
  - Facilitate the EU single market & level playing field
  - Ensure the highest common level of safety
- NEXT: move to large series approval (AVP first)



# Thank you!



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