Achievements and work ongoing: EC perspective

High Level Dialogue on Connected and Automated Driving (CAD)

DG GROW
Ghent, 18 June 2024

EU Type-approval framework for driving automation

UNR171

L2 DCAS

(Driver Control Assistance System)

Driver present, engaged and responsible

Wide range of operations

No vehicle series limitation

UNR157

L3 ALKS

(Automated Lane Keeping System)

Driver present not engaged

Motorways

No vehicle series limitation

Cybersecurity measures

EU 2022/1426

L4 ADS

(Automated Driving System)

Driver not present

Operations in specific areas

Vehicle series limitation (max. 1500)

Multi-pillar validation method

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Fostering CCAM deployment in the EU

1. Interpretation Document 2022/1426 (16:35-17:45)

2. Updates of national rules and legislation (11:00-12:10) and initiative by Member States

3. Guidelines on harmonised testing (16:35-17:45)

4. Large series (16:35-17:45)

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1. Interpretation Document EU 2022/1426 (link)

Interpretation of EU Regulation 2022/1426 on the Type Approval of Automated Driving Systems

ISSN 1831-9424

Ciuffo, B., Dona, R., Galassi, M., Giannotti, W., Sollima, C., Terzuoli, F., Vass, S. (eds.)

2024

EUR 31842 EN

- **Interpretation Document for Regulation 2022/1426**
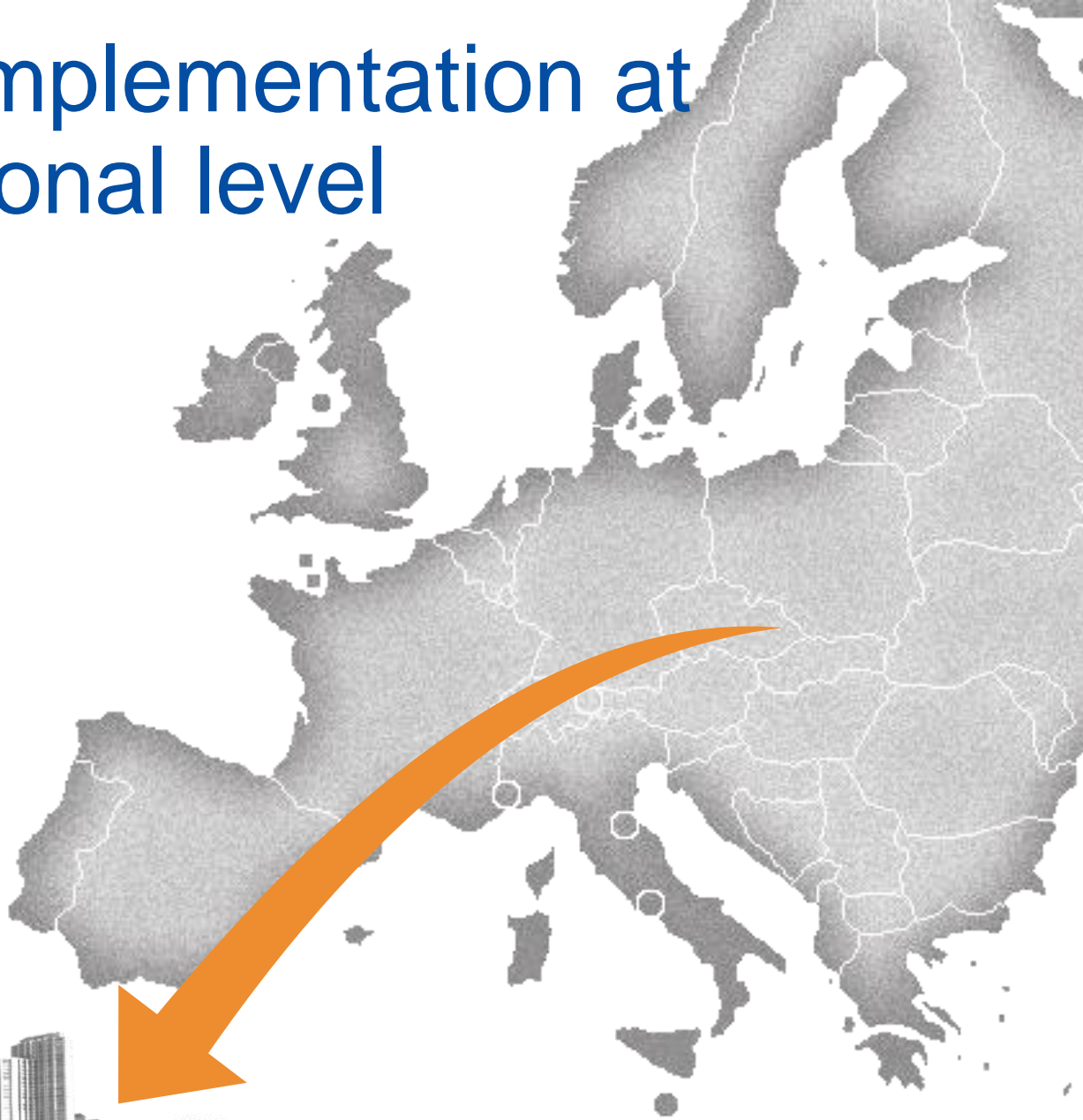 - ➤ Including Technical Guidelines on selected topics based on identified priorities
  - ➤ <u>not</u> to add or modify requirements

- 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

2. Local level

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2. Policy-related topics report (link)

- (2023) Three workshops on ADS deployment across Europe

  - amendments needed on national rules and legislation

  - on other policy topics relevant for ADS deployment (e.g., pre-deployment testing, registration, enforcement,…)

- (2024) Implementation of EU 2022/1426 Summary Report on Policy-related Topics published

- (2024) Initiative by Member States

Implementation of EU 2022/1426
Summary Report on Policy-related Topics

Trentadue, G., Rusciano, E., Ciuffo, B., Galassi, M.

2024

3. Guidelines on harmonised access to testing permits

- Existing barriers to cross-border testing hinder CAVs deployment (and large-scale testing)

- Need for harmonisation of testing procedures across EU (from both manufacturers and TAAs side)

- Focus on technical nature of the testing

- Draft ready (see JRC presentation)

➔ **Endorsement by Member States**

GUIDELINES ON A UNIFORM EU-WIDE PROCEDURE FOR THE SUBJECTS OF ~~PRE-HOMOLOGATION ADS TESTING AND~~ PRE-TYPE APPROVAL ADAS AND ADS TESTING AND MUTUAL RECOGNITION OF TESTING APPROVALS AMONG MEMBER STATES

1. **Purpose and Scope of the Guidelines**

Current ADAS (UN-R171) and ADS-regulations (UN-R157, EU 2022/1426 and national regulations) lay down uniform procedures and technical specifications for the type-approval of assisted and automated driving system (ADS) of automated or fully automated vehicles. They include provisions to demonstrate vehicles' performances on public roads but don't provide on their own the legal basis for carrying out such tests. Nor can they support the need by developers and vehicle manufacturers to carry out research trials or test operations of automated driving vehicles on public roads.

Testing innovative ADAS and ADS technologies on public roads across Europe requires in most countries a testing permit granted by national, regional or local authorities. This generates substantial inefficiencies as, in most of the cases, tests need to be carried out in multiple sites with different characteristics, thus requiring several parallel processes to receive the different permits. As a result, authorities are facing the challenge of understanding the right framework to

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4. Large series approval

ANNEX V

AUTOMATED PARKING SYSTEM (APS)

The structure of the annex is as follows:
- Part 1: Scope and definitions.
- Part 2: Performance requirements.
- Part 3: Compliance assessment.

PART 1: SCOPE AND DEFINITIONS

1. **Scope of application**
1.1. This set of requirements applies to ADS features with a restricted ODD, which perform the DDT with regard to parking and manoeuvring systems for use in publicly accessible parking areas.

2. **Definitions,**
for the purposes of this annex.
2.1. 'Automated Parking System (APS)' is an ADS feature for the parking of a fully automated vehicle within an ODD.

2.4. 'APS trip' includes the verification of all safety-related conditions in the APS feature for APS activation, the subsequent execution of the DDT and the APS deactivation.
2.5. 'Transition location' is a designated area located within the ODD, which is appropriate to start or stop the APS feature (e.g. fully automated vehicle drop-off or pick-up, electric vehicle charging areas, car washes, etc.).
2.6. 'Smallest relevant object' means the smallest vulnerable road user that the APS feature is able to detect and react to while carrying out the DDT.
2.7. 'Safety distance' is a distance to which the fully automated vehicle shall react by an appropriate way. Reaction to front, side or rear objects may vary based on their distance (e.g. speed decrease, stopping or evasive manoeuvre).
2.8. 'Permanent object' means unmovable objects within the ODD (e.g. structural installation like walls, pillars, limiting stones, guard rails, traffic light masts, etc.).
2.9. 'Static object' means potential moveable objects within the ODD, which do not move in the relevant period (e.g. a vehicle braked or parked at standstill, a VRU, a suitcase or an object hanging into the driving corridor).

- Small series scheme was a first step towards ADS market deployment

- Collect evidence of ADS performance

- **Move to unlimited series approval**

- Automated Parking first
  - APS Annex (ref. "Technical Requirements Catalogue for AVP" and ISO 23374)

- **Consider additional use-cases**

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Concluding remarks

- **Automated Vehicles approval** already possible
- Guidance for harmonized implementation:
  - ➢ *Interpretation Document* to ensure a single regulatory process
  - ➢ *Policy-related topics* and *harmonized access to testing* are key to build the EU single market for CCAM
- Gradually move to **large series** ADS approval (APS first)

Thank you!

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