



Pre-Type Approval ADS Testing

Guidelines for harmonized requirements for open road ADS testing in the EU

High Level Dialogue on Connected and Automated Transport

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Joint
Research
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Background

- Current ADS-regulations include provisions to demonstrate vehicles' performances on public roads but don't provide on their own the legal basis for carrying out such tests
- Tests which need to be carried out in multiple member states, require several parallel processes to receive the different permits.
- In January 2024 the pre-Homologation Testing Sub-Group (HTSG) was established by the MVWG-ACV group, with the objective to **“to develop guidelines for harmonized requirements for open road ADS testing in the EU”**
- 40+ experts volunteered to join the sub-group under the leadership of JRC and contribute to its activities
 - Discussions on Definitions, Purpose and Scope of Guidelines
 - Presentations about the approaches in 9 different MSs (AT, DE, DK, ES, FR, NL, NO, PT, SE, plus UK) and identification of main building blocks for the different procedures
 - Development of a Structure for the Guidelines

Scope

- **Automation level**
- The group's focus is on all automation levels to include tests required by UN-R157, EU 2022/1426, **UN-R171**, Art. 39,...
- Whether to include also lower levels of automation systems was discussed in the group.
- Discussion about the real need to have special provisions for allowing cross-border testing
- Conclusion that explicit mutual recognition is beneficial also for lower level of automation
- **R&D Testing as well as Type Approval Testing**
- The group concluded to focus on both type approval and development testing (whole pre-deployment phase) as both contribute to eventually achieve the TA

Rationale

- **The Guidelines cannot replace MSs' testing frameworks or fill gaps therein**
 - The ADS developer will still need to submit an application to each MS where testing is needed
 - In case a MS does not have a framework in place to allow testing of ADSs, the guidelines will not be able to help
- The Guidelines suggest MSs to adopt a “**collaboration framework**” to simplify testing and facilitate mutual recognition of ADSs

Principles

- The draft Guidelines have been based on the following principles:
- Creation of a **common structure** (minimum common denominator) of the **documentation package (Handbook)** to be submitted to different MSs
 - A proposal for a template being prepared (with support from FAME)
- Identification of **National Contact Points** for receiving the test applications and supporting their approval
- In case of type approval testing, the **granting TAA contacts the TAAs of the relevant MSs** to receive support in achieving test permits (both in case of tests to be carried out by the OEM and those executed by the TAA/TS).

Structure and content of the Draft Guidelines

Structure of the Guidelines

1. Purpose and Scope of the Guidelines
2. Procedure for obtaining test permits
3. Requirements for obtaining test permits
 - Risk Assessment
 - Development Concept
 - Vehicle Registration and Insurance
 - Permanent Human Supervision
 - Data Management and Data Provision
 - Information about System ODD and the Geographical Area
 - Names of Persons responsible for Trial Activities
4. Application process for obtaining test permits
5. Mutual Recognition of Permits Among Member States in the case of cross-border testing
 - Cross-border testing for development
 - Cross-border testing for type approval

Annexes

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 **and based on exemptions from existing regulations**. 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 use depending on the kind of testing to be conducted, while industry is finding it time consuming, expensive and sometimes difficult to get the permission to test. The discussion on how to improve this situation is on-going in different fora, both at national and at EU level.

The need for a harmonized admission procedure is **vital** crucial at this stage to make automated driving a success. Realising the benefits of this technology at scale will only happen if we give developers and manufacturers the flexibility to test at scale across expanding Operational Design Domains (ODDs) and geographies, especially for testing with a safety operator inside the vehicle. **On-road** Testing on public roads is **crucial to create a safe automated driving product**. It is essential to **better** understand the product interaction with real-world driving behaviour, the ODD and to **expand these learnings into the product**. This cannot be achieved by relying only on test tracks, simulations or internal R&D activities, see Annex 1.

~~For Level 4 automation, regulation 2022/1426 does not regulate test operation of automated vehicles nor subsequently implementation or modification of ADS. National or regional regulations have to be applied for this.~~ There are specific regulations for test operation of ADS only in a few EU countries under their national regimes. Where no specific regulations are available, it is necessary or possible to apply individual approvals and exemptions for test operation of vehicles with ADAS and ADS. Those regulations vary considerably from country to country.

The resulting effort for the approval of large scale cross border trials on public roads across Europe is **almost impossible** difficult to manage under these conditions and negates the goals of the European Single Market.

Today, products that need road trials are in their majority not initial prototypes and to a large extent they already comply with the existing regulations. The need is to have pragmatic provisions to allow R&D and pre-homologation type approval testing of ADAS and ADS, including **also** cross-border road testing.

Comprehensive evaluation of regulations and practices in member states as well as recommendations developed by CCAM-projects under the Horizon Europe programme have revealed valuable insights, presenting an opportunity for harmonizing and improving the application process for ADAS and ADS-testing on public roads.

The purpose of these guidelines is **not to replace processes implemented by Member States but** to suggest a collaboration framework, consisting of **such** a pragmatic approach for the application and granting of open road testing approvals through national authorities as well as to suggest a way how these testing permits can be mutually recognized by member states in the case of cross-border testing.

The objective is to save time and effort when compared with the status quo of today where test application procedures can vary considerably from one country to the other.

The scope of these guidelines is pre-type approval testing **for technical purposes**, meaning all ADAS and ADS testing on open roads, which takes place before homologation **or** and type-approval, both for research and development and to obtain homologation or type approval.

2. Procedure for obtaining testing permits