EDGE CASES – A NEW APPROACH FOR SAFE TESTING IN AUSTRIA

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Actual Situation
Contact Point Automated Mobility

- One of the first measures of the first Action Plan (2016-2018)
- First point of contact in legal and technological issues for national and international companies and projects

Functions:
- Supervision of projects
- Organisation of exchange of knowledge
- Dialogue with various organisations
- Participation in international research projects
- Creating a yearly monitoring report
- Examining conditions for obtaining a certificate for testing automated vehicles
Tests on public roads - Background

▷ Political:
  • Action Plan Automated Driving in Austria (2016)

▷ Legal
  • Amendment to the Motor Vehicle Act
  • Automated Driving Ordinance (AutomatFahrV)

▷ Organisational:
  • Code of Practice
  • Contact Point Automated Mobility
  • Council of Experts
  • Definition of the process for obtaining a test certificate
The test process

Consultation

Application form

Advice by Council of Experts

Obtaining a certificate

Testing

Reporting
Tests on public roads - Criteria

Who is allowed to test?
- Vehicle manufacturers
- Research institutions
- System developers
- Transport operators

3 use cases
- Self-driving minibus
- Motorway pilot with lane-changing assistant
- Self-driving military vehicles
Further development
How to further develop this approach?

- Add new use cases or adapt/extend existing use cases
  - Allow higher speeds
  - Extend to goods transport
  - ....

- **Sandboxing**
  - introduction of controlled test and experimentation spaces ("sandboxes") with new transport technologies in public spaces

- Replace fixed use cases by Edge Cases approach

„All roads lead to Rome!“
Edge Cases approach

- The organisation performs tests within simulation and on proving grounds to determine the capability of the vehicle / systems.
- Based on defined edge cases (out of a standard catalogue).
- The organisation describes the ODD / operating environment being the framework for the planned tests and basis for the test certificate.
- Independent auditor tests the vehicle / systems and
- Confirms the ability of the vehicle / systems to be operated within the defined ODD / operating environment safely (enough) on public roads.
Edge Cases approach

**Advantages:**
- No restrictions by existing use cases
- Evaluation of the situation and abilities by an independent auditor
- Reduced effort for authorities

**Disadvantages:**
- Additional effort and cost for the process and the auditor (for the organisation)
- Availability of respective auditors not yet clear
Conclusion
Edge Cases approach

- Additional regime to get a testing certificate
- Higher flexibility
- The whole approach still needs to be elaborated in detail
  - The process
  - The standard catalogue of edge cases
  - The legal framework, ...
- AHEAD project (09/2020 – 04/2022) aims to develop the required process and corresponding methods
  - Funded by Austrian research funding programme MdZ
  - Consortium: KFV (lead), ANDATA, CITA, TU Wien, DLR
  - Links: https://ahead-project.at/; https://projekte.ffg.at/projekt/3791257
Thank you for your attention!

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