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# EDGE CASES – A NEW APPROACH FOR SAFE TESTING IN AUSTRIA

**Wolfram Klar  
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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



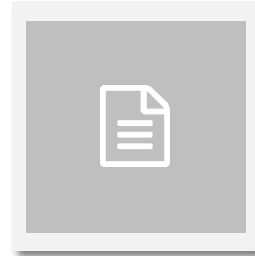
## Application form



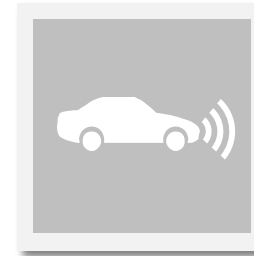
## Advice by Council of Experts



## 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





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**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



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**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>

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# Thank you for your attention!

## Speaker

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