

Automated Mobility in Austria

Testing of vehicles with automated functions in Austria

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Tests of automated vehicles on public roads in AT - key facts

- Automated Driving Regulation (AutomatFahrV) - based on an amendment of the Motor Vehicle Act (KFG)
- **AutomatFahrV defines requirements and specifications** for testing ADAS or automated vehicles on public roads in Austria (operator, roads, safety measures,...)
- AutomatFahrV in force **since 2016** (amendment 2019 and 2022)
- Since 2016 around **50 test certificates** (as of June 2022) have been issued by the Federal Ministry

Automated Driving in Austria - principles & guidelines

Safety & Security

Highest priority for road safety of
all stakeholders involved

Regular operation

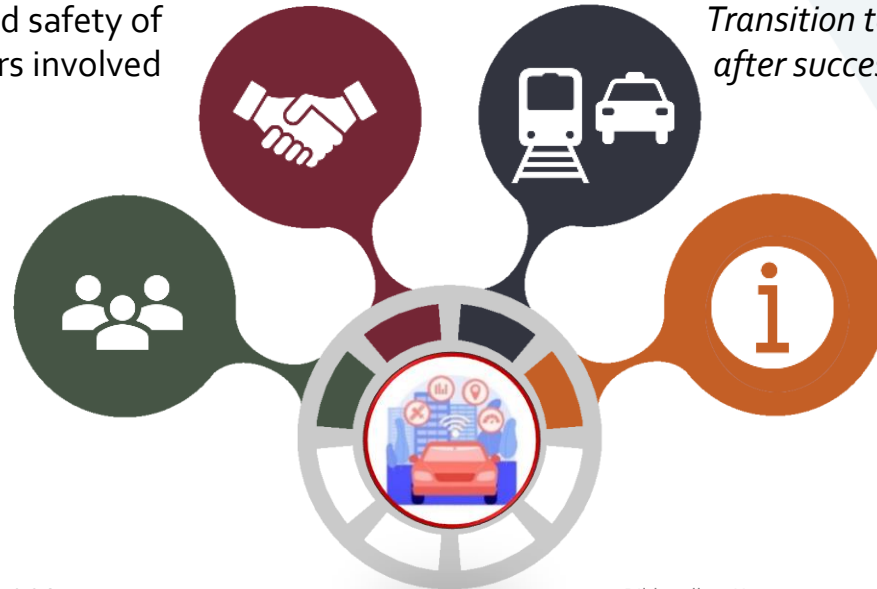
*Transition towards regular operation
after successful testing*

Use-case oriented





*Test framework
based on defined use-cases*

Communication

Transparent communication
of results (reports) and
involvement of the public
sector



Automated Driving in Austria - safety as highest priority

-  **Safety driver / operator**
Inside the vehicle mandatory
-  **Skills and expertise**
Drivers license, familiar with the system, adequate driver training
-  **Previously been tested sufficiently**
Sufficient simulated testing and testing on private property in comparable situations
-  **Route analysis and risk management**
Specified route analysis and risk assessment

Skills and
expertise

Risk
management

Safety driver /
operator

Pre-testing



Tests of automated vehicles on public roads in AT - key facts

- Automated Driving Act since 2016, based on use cases:
 - Motorway pilot with automated lane change
 - Automated minibus
 - Autonomous military vehicles
- 1st amendment (2019) created a **legal basis to ensure** that permitted driver assistance systems, specifically **parking aid** and **motorway assistant**.
- **2nd amendment** (02.04.2022) enables **5 new use-cases** addressing mobility for passengers, goods and special use cases



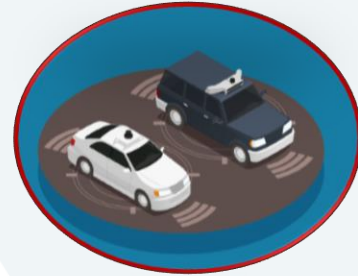
AutomatFahrV – use-cases: transport of passenger

- **Automated minibus**
 - Vehicle class: M (≤ 15 people); $v_{\max} = 20\text{km/h}$
- **Automated vehicle for passenger transport**
 - Based on vehicles that have already been type-approved
 - Vehicle class: **M1, M2, L7e** ; system capable of assuming all driving tasks at $v_{\max} = 50\text{km/h}$

NEW

Both use-cases:

Predefined test route /test area; **operator inside the vehicle mandatory**



AutomatFahrV - use-case: transport of goods

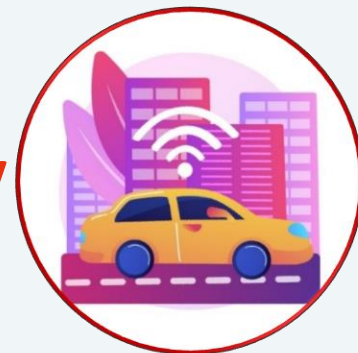
- **Automated vehicle for the transport of goods**

- Vehicle class: **L7e, N1, N2, N3**
- Tests with vehicles that have not been type-approved
before: system capable of assuming all driving tasks at $v_{\max} = 30\text{km/h}$
- Tests with vehicles that are based on type-approved
vehicles: system capable of assuming all driving tasks at $v_{\max} = 50\text{km/h}$

- Predefined test route /test area; **operator inside the vehicle mandatory**
- Transport of hazardous goods is not permitted



AutomatFahrV - use-cases: motorway and expressway

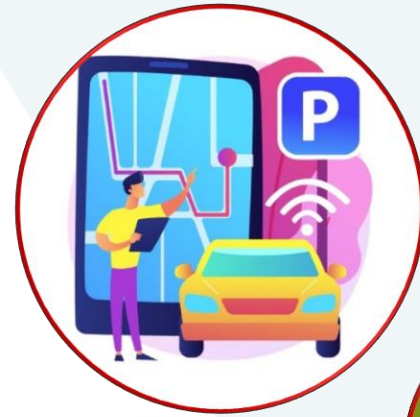


- **Motorway pilot with automated lane change**
 - Vehicle class: **M1, M2, M3, N1, N2, N3**
 - Automated longitudinal and lateral control on motorways and expressways
- **Motorway pilot with automated driving on ramps and exits**
 - Vehicle class: **M1, M2, M3, N1, N2, N3**
 - All functions (longitudinal and lateral)
 - Tests only on motorways / expressways after permission from road operator

Both:
Predefined test route
/test area; **operator**
inside the vehicle
mandatory

NEW

AutomatFahrV – special use-cases



- **Automated valet parking**

- Vehicle class: **M1**
- Maximum speed is limited to $v_{\max} \leq 10\text{km/h}$ (operator outside)
- Predefined test area (car park, multistorey car park)



- **Automated working machine**

- Vehicle class: automated working machines
- Maximum speed is limited to $v_{\max} \leq 20\text{km/h}$, $v_{\max} \leq 10\text{km/h}$ (operator outside)
- Predefined test route / test area

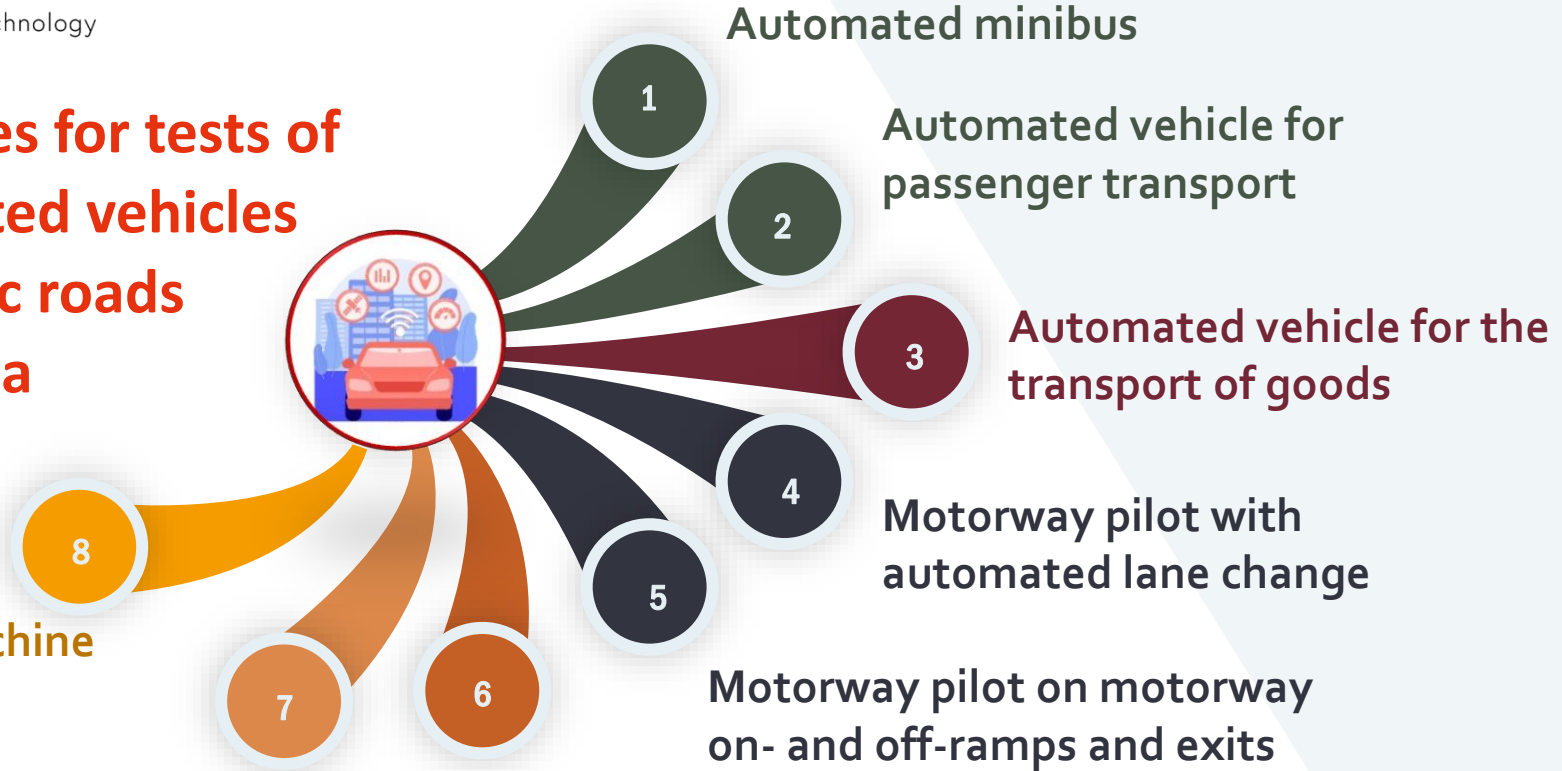
Use-cases for tests of automated vehicles on public roads in Austria

Automated working machine

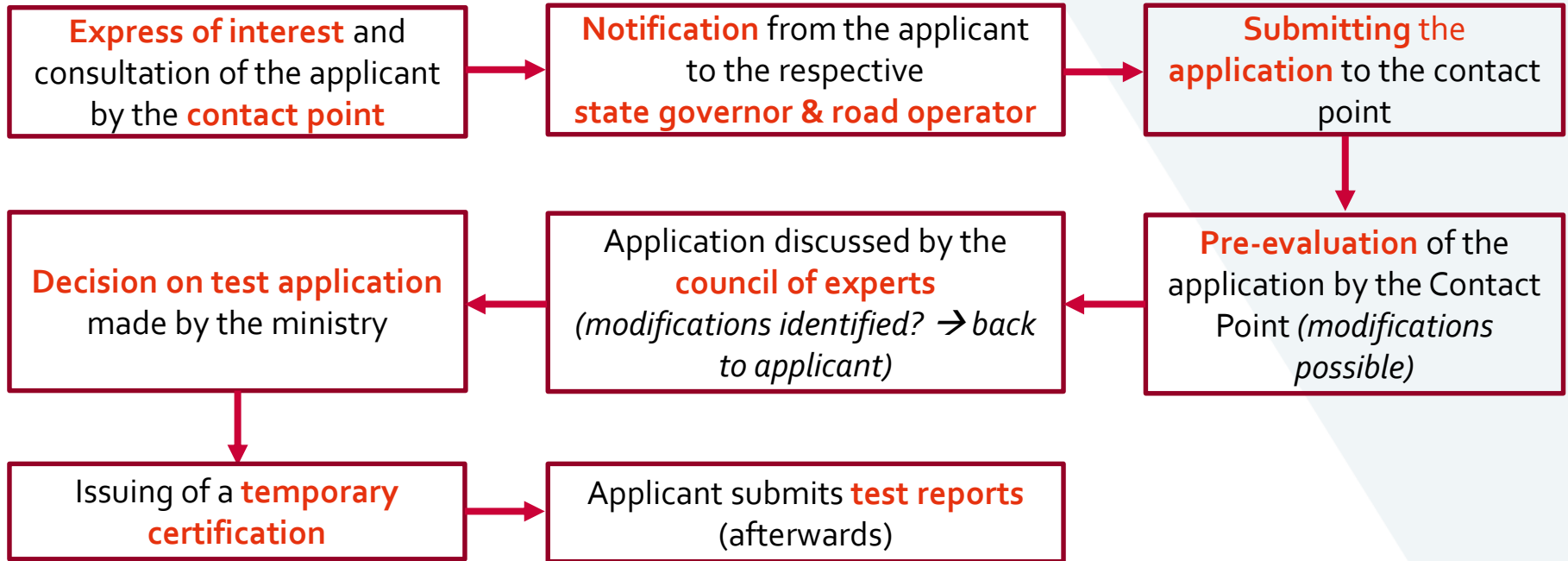
Automated valet parking

ZalaZONE Trilateral Conference

Autonomous military vehicles



AutomatFahrV - process and procedure (simplified)



Automated driving in Austria - in a nutshell

- **Based on automated driving act + Code of Practice**
- **New requirements for route analysis & risk assessment**
- **National contact point** to support and assist with **application** form
- **Ministry** can issue a temporary permit for testing
- **Mandatory:** physical presence of a human test driver in the vehicle; data recorder and liability insurance; test report afterwards
- **All documents:** <https://www.austriatech.at/en/testantraege-kontaktstelle/>



*“Does your car have any idea why
my car pulled it over?”*



Test regions for automated mobility

ALP.Lab

offers comprehensive services for safe and secure testing of automated driving technologies and advanced driver assistance systems for light vehicles. <https://www.alp-lab.at/>

Digitrans

provides know-how and test infrastructure and accompanies the testing, validation, research and implementation of automated and autonomous commercial vehicles and their various applications. <https://www.digitrans.expert/en/>



Thanks for your attention!

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