



Add value.
Inspire trust.

Permit for operating automated vehicles (AV) on public roads

Functional safety closes the regulatory gap for prototype approval.

Your challenges

Vehicles across the world require approval from authorities before they can be used on public roads, with the approval decision process typically relying on official traffic acts and regulations. Responsibility for vehicle approvals remains with local, state or federal registration institutions, while inspection bodies and technical services prepare the reports necessary for approval.

AV participants like vehicle manufacturers, suppliers or mobility providers, who work on manufacturing and operating prototypes of automated vehicles, have an urgent need to test SAE L3 automation (and higher) on public roads. However, today's regulations are inadequate, since they only apply to low levels of automation, i.e. up to SAE L2. There are currently no regulations suitable for SAE L3 and higher, which would be necessary to ensure the safety of automated vehicles and allow public usage.

Why is AV permit so important?

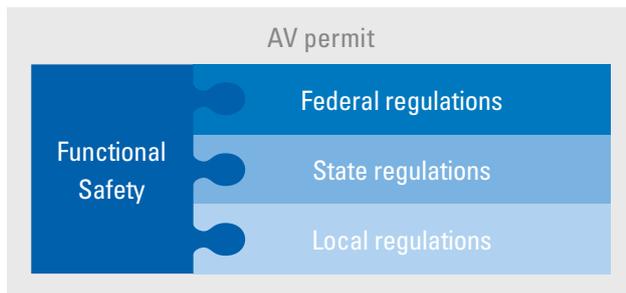
In many countries like Germany, USA and China, approval for SAE L3+ automation for public roads is only possible for those vehicle manufacturers with a special permit. This permit is mostly granted to vehicle manufacturers or Tier 1 suppliers, giving them an allowance for automated vehicle prototypes to be used on public roads. Without such an allowance, AV participants are not able to perform field tests. But, such tests are vital for the validation of performance and safety during the development of automation functions. To obtain the permit, the operator has to provide a sound safety concept and prove that the vehicle will not compromise road safety.

How can we help you?

As one of the leading experts in the field of automated driving, TÜV SÜD enables AV participants to obtain permits by supporting them in the development of a safety concept, or by validating their current one. The AV permit applies to single prototype vehicles and prototype fleets.

Our support builds on state-of-the-art safety standards, such as ISO 26262, and goes beyond standards by considering SOTIF, cyber security and fail operational systems in an holistic safety evaluation. We introduce functional safety as the new ingredient in the approval process. Our officially recognised TÜV SÜD experts assess key elements of the vehicle's functional safety, in addition to the traditional inspection aspects of today. If changes to the vehicle are made after the approval is completed, only the updates require an additional permit, rather than the entire vehicle. This offers you an efficient process when further developing your automated vehicles.

FUNCTIONAL SAFETY CLOSES THE REGULATORY GAP FOR AV APPROVAL



Our services for AV permit

TÜV SÜD supports the approval of automated vehicles, prototypes and experimental vehicles by providing the following services:

- **Consulting and technical advice**
Our global experts provide you with insights into the AV approval process, and help you to understand the relevance of single vehicle approval and type approval. Furthermore, we support you in selecting the right regulation for your approval needs.
- **Preparation of documents**
We assist you in preparing relevant documents for the approval application. In addition, an overall check ensures that documentation is complete.
- **Safety concept and test catalogue**
We provide our customer with insights about our inspection procedure. This includes reviewing the existing hazard analysis, safety concept, design review and test catalogue, to ensure sufficient functional safety of the prototype.
- **Checklist of requirements**
We clearly document in the checklist that the safety functions are fulfilled by your prototype.
- **AV permit**
Based on the results and the fulfilled safety requirements, we provide a technical report which evaluates road worthiness.

APPLICATION EXAMPLES OF AV PERMIT

- Automated bus shuttles
- AV prototypes
- Mobility as a service

Your business benefits

- **Develop key AV technologies** – by ensuring that your new automated driving developments are safe and can be efficiently tested on real road conditions.
- **Gain a competitive edge** – by working with international multidisciplinary experts that have an in-depth knowledge of the latest global regulations and standards, and who are focused on achieving a safe roll-out of your automated technologies making it a success story.
- **Receive customised services** – based on your individual needs, whether you require AV permit for your bus shuttles, for your newly developed AV prototype, or for your mobility services.

Why choose TÜV SÜD?

TÜV SÜD is an officially recognised independent third party testing, inspection and accreditation body with over a century of automotive safety and performance expertise. We have successfully applied this new approach to a variety of automated mobility solutions, most of which have already been approved by authorities for use on public roads.

Add value. Inspire trust.

TÜV SÜD is a premium quality, safety and sustainability solutions provider that specialises in testing, inspection, auditing, certification, training and knowledge services. Represented in over 1000 locations worldwide, we hold accreditations in Europe, the Americas, the Middle East, Asia and Africa. By delivering objective solutions to our customers, we add tangible value to businesses, consumers and the environment.

Related services

TÜV SÜD provides the following related services:

- ISO 26262 functional safety services
- International homologation
- Vehicle and component testing