



IABG. The Future.

## Tram Simulator ATO

### User-Centred Prototyping of Driver Assistance Systems for the Next Generation of Trams

Germany's transportation transition demands new mobility strategies. Highly automated rail operations will play a key role in increasing the frequency of passenger transport and addressing the personnel shortage in the rail sector. Trams, in particular, hold significant potential for automation, but robust sound certification is essential to guarantee safe operation. Driver assistance systems already improve safety and help reduce accidents.

Although advanced driver assistance systems (ADAS) are already common in modern road vehicles, their implementation in trams has been limited. Studies show that partial automation can significantly reduce the frequency and severity of accidents, ultimately saving lives. In addition, ADAS relieves tram drivers in complex urban traffic and assists in adhering to operational tasks as outlined in the DFStrab (Dienstanweisung für den Fahrdienst mit Straßenbahnen). To stay competitive and create attractive working conditions for tram drivers, operators should prioritise the inclusion of advanced assistance systems when procuring the next generation of trams.

#### Solution approach tram simulator

IABG supports tram operators in the procurement process of their next-generation trams with the innovative **Tram Simulator ATO**. This flexible, manufacturer-independent platform is specially designed to develop of customised automation solutions. Based on a modern tram driver's workplace with standard railway components, our virtual simulation enables interactive training within operator-specific rail networks. The focus is on developing assistance systems and partial automation solutions to meet your specific needs. With the **Tram Simulator ATO**, you are fully equipped for the future of tram operations.

## Our Services

- Virtual simulation of operator-specific track sections
- Modeling of the desired road types and assistance systems
- Conducting user tests with tram drivers
- Usability and cognitive load (workload) analysis
- Individual prototyping and ad-hoc software development for assistance systems
  - Flexible design and optimisation of assistance systems
  - Variable perspectives and user interface elements (GUI)
- Technical requirements derivation for ATO and feasibility studies
- Consistent configuration management to identify dependencies and consequences
- Incorporation of ATO requirements into operator-specific technical specifications

## Your Added Value

- Manufacturer and product-independent advice
- Ergonomic support to increase drivers acceptance
- Reliable, verified requirements for assistance systems
- Comprehensive tenders for next-generation trams
- Process and financial follow-up assessments for operation and maintenance
- Risk mitigation and cost savings by avoiding incorrect orders or late-stage modifications



### FOR FURTHER INFORMATION PLEASE CONTACT:

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