



Autonomous Driving Solutions

SGS AUTOMOTIVE SERVICES

Automated driving and autonomous vehicles are posing increasing challenges in terms of reliable functionality and necessary safeguards. New testing methods and regulations must be developed, and industry standards evolved for the safe introduction of new technologies.



Functional
Safety



Cybersecurity



Safety Of The Intended
Functionality (SOTIF)



Homologation

SGS offers safety inspections and testing solutions for automated driving functions and autonomous vehicles in the following areas: functional safety, cybersecurity and its management systems, safety of the intended functionality (SOTIF) and homologation.

FUNCTIONAL SAFETY

The ISO 26262 standard for functional safety was developed with the aim of avoiding dangerous malfunctions in electronic systems. As global market leader we are an accredited body for functional safety and offer expertise to help clients achieve compliance for complex electronic systems, with or without artificial intelligence (AI), including:

- Products and processes
- From semiconductors to complete systems
- Future technologies

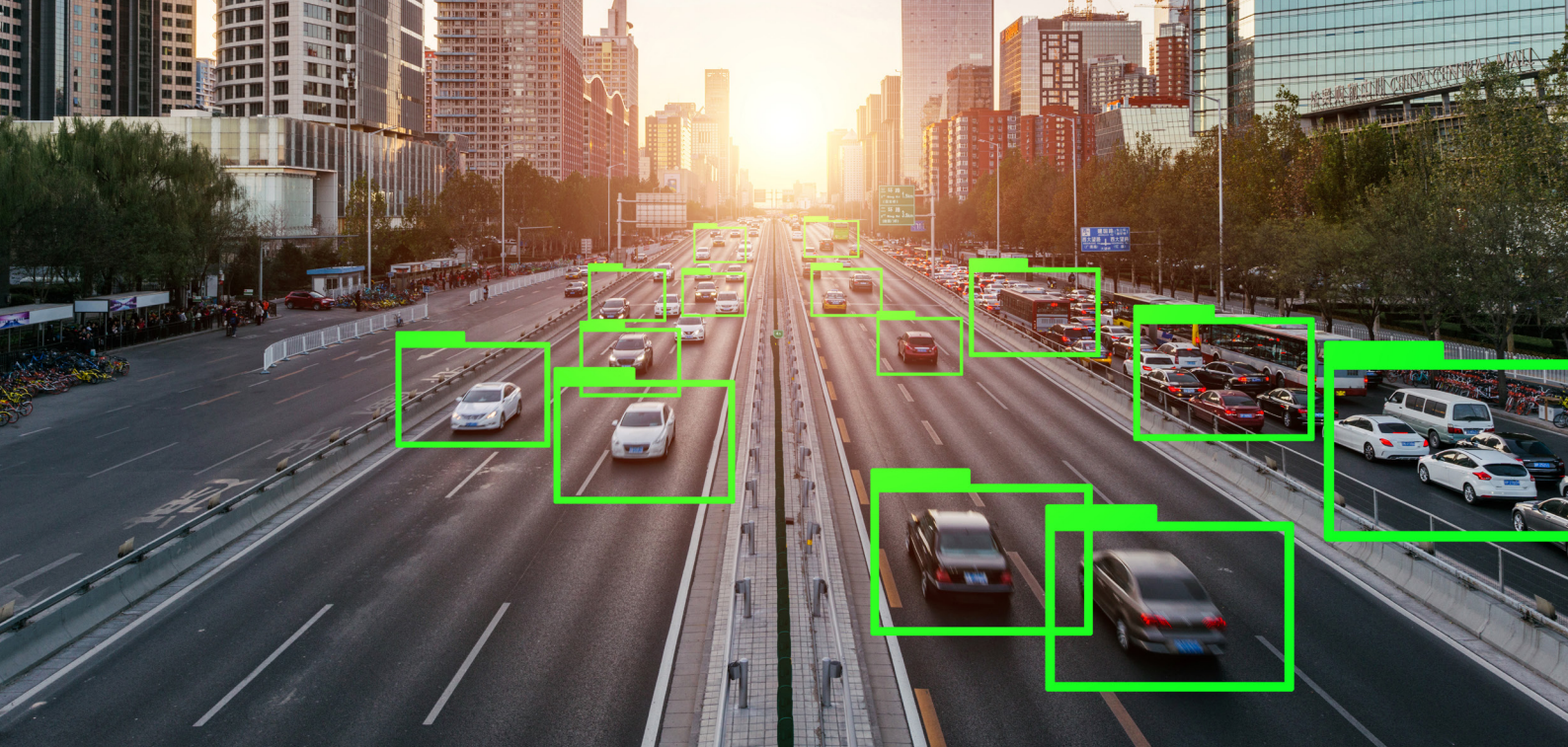
Our experts offer ISO 26262 focused and other related safety services – locally and globally:

- Training and personal certification
- Consulting and support
- Gap and maturity analyses for products and processes
- Support and training for safety analysis
- Assessments and audits
- Certification of safe products and processes

CYBERSECURITY

ISO/SAE 21434 is a new standard which addresses cybersecurity threats. Many aspects are analogous with ISO 26262. As an accredited body for automotive cybersecurity, we offer the following services:

- Training and personal certification
- Consulting
- Gap analysis of processes
- Penetration testing, fuzz testing, etc.
- Cyber security analyses/workshops
- Assessments of products
- Audits of processes and cybersecurity management systems (CSMS)
- Certification of products and processes



SOTIF

The absence of unreasonable risk due to the potential hazards of these advances is defined as the safety of the intended functionality (SOTIF). The new SOTIF standard, ISO 21448, has been designed for this purpose with its focus on autonomous and highly automated driving.

Our SOTIF consultancy services:

- SOTIF training
- Gap analysis for processes and products
- Support with safety management and interfaces with functional safety (ISO 26262)
- Consulting on safety concepts and safety cases
- Rollout of SOTIF processes
- Moderation of risk and safety analyses
- Interface management with suppliers
- Assessments audits and certification

HOMOLOGATION

As a designated Technical Service, we can assist you with EU and UN regulated components/systems and/or vehicle approvals. We test and evaluate with regard to national road traffic regulations such as StVZO and on new vehicle concepts. Assistance with documentation preparation for individual markets is also available. Within the framework of EU and UN regulations, we conduct testing on the basis of physical or virtual procedures:

- Passenger cars/buses (class M), trucks (Class N) and trailers (Class O)
- Vehicles for special purposes (e.g. mobile cranes, motor homes)

- Agricultural and forestry tractors (class T)
- Parts, components, independent technical units
- Multi-stage type-approvals (e.g. body builders)
- Small series type-approvals
- Individual vehicles approvals

We can guide you through all stages of the testing and approval process, assisting with:

- Determination of the technical and legal requirements of the respective target markets
- Determination of the required scope of testing and approval
- The planning and efficient execution of the tests
- Interpretation of the specifications by public authorities
- Support in the preparation of manufacturer documentation
- COP Tests (conformity of production)

Our homologation services also cover the following new regulations, especially development for automated driving:

CYBERSECURITY MANAGEMENT SYSTEMS (CSMS, UN REGULATION 155)

- Cybersecurity must be considered throughout the supply chain
- Security risks must be considered in the early development phase of vehicle architectures and E/E platforms

WHY CHOOSE SGS?

Working with industry leaders globally, we have helped create and implement new standards including ISO 26262, ISO/SAE 21434. We are an accredited body for safety and security standards for various industries, including ISO 26262, IEC 61508, ISO 25119, ISO 21434 and ISO 21448, among others. In addition, we have extensive experience with modern driver-assistance systems and other complex electronics, also containing AI. The first Level 3 system for series production approved by the Society of Automotive Engineers (SAE) was evaluated by SGS and we are shaping the future by actively defining legal regulatory frameworks internationally.

We are a recognized testing authority for over 400 global procedures including VO (EU) 2018/858, 167/2013 and 168/2013.

SOFTWARE UPDATE MANAGEMENT SYSTEMS (SUMS, UN REGULATION 156)

- Efficient and reliable distribution of new software, updates and functional patches are crucial for autonomous vehicle safety.

AUTOMATED LANE KEEPING SYSTEMS (ALKS, UN REGULATION 157)

ALKS are subject to UN 155 and 156 regulations. Testing and verification of systems including simulation tools and mathematical models are required under UN 157. All three of these regulations refer directly to safety standards, specifically:

- ISO 26262 for Functional Safety
- ISO/PAS 21448 for Safety of the Intended Functionality (SOTIF)
- ISO/SAE 21434 for Cybersecurity of Road Vehicles

CONTACT US

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WHEN YOU NEED TO BE SURE

SGS