# “Never Trust, Always Verify”

## Trust Management for Self-Driving Cars

CONNECT
CCAM TRUST & RESILIENCE

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Driving on the road requires trust in others and the environment, but in reality, we never completely trust our surroundings - not us, not other drivers or what is ahead of us. Such a level of mistrust can have severe consequences on the safety of such systems and, thus, their users/drivers; concerns that are particularly aggravated in the context of self-driving cars. The EU-funded CONNECT project launching in September 2022, coordinated in Austria by Technikon, sets out to tackle exactly this concept of (dynamic) trustworthiness within automotive driving to create a new era of advanced road safety. It involves 17 partners from 9 European countries including representatives from automotive manufacturers, OEMs, and SME’s, to research institutions.

The project works on establishing a trust management framework, tackling the zero trust paradigm, for enabling the provision of the necessary assurances and a verifiable chain of trust between all participating entities (e.g., vehicles, MEC) towards collaboratively executing safety-critical functions. By combining the use of trusted computing and intelligent network architectures, CONNECT aspires to facilitate mutual trust between automotive services and platform meaning that 1) in principle, no trust assumptions can be made about the vehicle and it should be considered as if it would be running in an “hostile” environment, and 2) vertical trust needs to be bootstrapped for all layers of the automotive communication stack. These assessments of trust are important for sharing data securely with entities that a vehicle hasn’t had any previous trust relationships. Leveraging the vehicle’s systems with information available in the cloud expands the knowledge on the environment, required for decision making, so that safety-critical decisions can be made in a trustworthy manner (in tandem edge and cloud computing) delivering a wealth of benefits, including safe and reliable autonomous driving, energy optimization and real-time navigation, as well as new (situation awareness) services based on the secure and big data veracity.
The three main questions that will be answered by the CONNECT project are:

- How can vehicles trust the input given by other vehicles so that safety-critical decisions can be made leveraging this enhanced knowledge from their surroundings?
- How can vehicles securely leverage Multi-Access Edge Computing (MEC) capabilities so as to outsource tasks in a trustworthy manner and curtail resource constraints on existing automotive networks?
- How to decide which applications (road safety, traffic management, infotainment etc.) remain in the vehicle and which can be offloaded dynamically to the backend of the cloud so that we can achieve safety without compromising security (and vice versa)?

Over the next 36 months the project will work on answering these questions and integrate it in a prototype. The 5,996 Mio EUR funding of the project will help develop this new security paradigm, which is the key element for having certifiable, more agile levels of trustworthiness to automotive services, and translates to long-term consumer confidence, which is a requirement for end-user adoption.

About Technikon:
Technikon is a private research service and engineering company in Austria which manages multinational teams in the organization, execution and assessment of EU-funded and nationally funded research projects. Technikon is Europe’s leading private company coordinating and disseminating technology-based cooperative European research projects.

For more information on the CONNECT project visit our web site or contact the coordinator directly:

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