CONNECT

CCAM TRUST & RESILIENCE

# *Never trust, alwasy verify*

CONTINOUS AND EFFICIENT COOPERATIVE TRUST MANAGEMENT FOR RESILIENT CCAM


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horizon-connect.eu

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**Budget**

**€ 5.7 Million**
100% EU-funded

**Consortium**

**17 Partners**
9 countries

**Duration**

**36 Months**
09/2022 - 08/2025

## Message from the Coordinator

The intention of this newsletter is to open a new communication channel to provide news on the project progress and to discuss ongoing topics relevant to CONNECT. This newsletter is intended for internal and external project partners, stakeholders and all other interested bodies. For more detailed information about the project, we invite you to visit our project website, which is constantly updated with the latest project related **news**. The project has successfully started with a kick-off meeting in 22nd-23rd September 2022 in Athens, Greece. The event was coordinated by Ubitech, Ltd with the main purpose of verifying plans and matching team members with first activities and to build the foundation for further collaboration. Hence, part of the agenda was the introduction of all the partners involved and their roles in the project. With the core vision of CONNECT towards building more trustworthy ecosystems in mind the consortium started putting together a more detailed research map. In addition, the work packages, including technical discussions and the planning of the next steps, took place. Since the kick-off, the consortium has been meeting virtually on a regular basis and is working relentlessly towards achieving the project objectives in this challenging and interesting topic.

# Technical Meeting in Limassol

The CONNECT partners met in sunny Limassol, Cyprus, hosted by Suite5 Data Intelligence Solutions. Day 1 focused on synchronizing CONNECT requirements and architecture, initiating the final wvork packages. Discussions covered CONNECT requirements, architecture, and trust definition based on ethical properties. The meeting provided a progress update with a research map and trust management framework. Use case content, such as Points of Action, User stories, Artefacts, and Actors, was examined for effective planning. The meeting facilitated in-depth discussions, enabling informed decisions and project advancement.

# The CONNECT Consortium

The CONNECT consortium consists of 17 partners from 9 different countries (Austria, Cyprus, France, Germany, Greece, Israel, Italy, The Netherlands and United Kingdom). It includes leading organisations from the different industry domains in automated trust management and security, different stakeholders in the supply chain complemented by expertise from the research sector and SMEs.

Technikon Forschungs- und Planungsgesellschaft mbH
Austria [Villach]

Red Hat Research
Israel [Tel Aviv]

Unisystems
Greece [Athens]

Institut de Rechercne Technologique SystemX
France [Paris]

Ubitech Ltd
Greece [Athens]

Trialog
France [Paris]

University of Twente, Department of Philosophy
Netherlands [Twente]

University of Surrey, Department of Computer Science
United Kingdom [Guildford]

Huawei Technologies
Germany [Munich]

DENSO AUTOMOTIVE Deutschland GmbH
Germany [Munich]

FSCOM
France [Antibes]

Politecnico di Torino
Italy [Turin]

Institute of Communication and Computer Systems, I-SENSE Research Group
Greece [Athens]

Intel Deutschland GmbH
Germany [Munich]

Centro Ricerche Fiat SCPA
Italy [Turin]

University of Ulm - Institute of Distributed Systems
Germany [Ulm]

Suite5 Data Intelligence Solutions Ltd
Cyprus [Limassol]

# Technical Update

The CONNECT project, led by the Security and Trust Computing Group at UBITECH, aims to address the security and operational assurance challenges in the realm of connected cars. The project's primary focus is on enhancing trust and designing robust security protocols to enable the transition towards autonomous driving. Here's an update on the work carried out in each technical work package:

**WP2:** Requirements and Characterization of CONNECT Outputs to Project Goal: Converged on the CONNECT reference architecture that steers the technical work of the other core WPs. Additionally, they have identified the operational and security services for Connected and Cooperative Automated Mobility (CCAM) and conducted an initial analysis of the evidence measures that can be considered during the trust assessment of the CCAM ecosystem.

**WP3:** Trust Architecture and Trust Management Lifecycle for Modular CCAM : This work package is dedicated to the architectural specification of the CONNECT Trust Assessment Framework, its operation, and interaction. Partners have performed a detailed SOTA analysis and agreed on the use of subjective logic as the core methodology based on which the Trust Assessment Framework will be based. WP3 also converged on the detailed roadmap of the different variants of the TAF that will be designed throughout the project – starting with the design of a standalone TAF (first version documented and submitted in D3.1) and then moving on to Federated TAF before concluding with the TAF assisted through Vehicle's Digital Twins deployed on the MEC.

**WP4:** Chip-to-Cloud Assurance for Connected Cars: Work has begun on WP4, focusing on fleshing out the specific mechanisms needed for safeguarding the operations of the various stakeholders in the context of CCAM as well as the specific functionalities that need to be supported through the secure elements to be deployed. For the former, the consortium has started working on the definition of novel attestation mechanisms towards the creation of appropriate trustworthiness claims that can provide evidence (in a verifiable manner) to be used for assessing the trust level of a data source. For the latter, a detailed analysis on the RoT to be adopted in the context of CONNECT was performed highlighting also functionalities in the context of state migration SW upgrade to be supported. Additionally, research is being conducted on Gramine and key management, with the aim of ensuring chip-to-cloud assurance for connected cars.

**WP5:** Trust-Aware Network Orchestrator and Secure Data Sharing:

In this work package, extensive research is being conducted on state-of-the-art orchestration and offloading techniques within the context of Multi-Access Edge Computing (MEC)-Enhanced vehicular environments.

**WP6:** Framework Integration and Use Cases Demonstrations: The planning and integration of three use cases have commenced with focus on the definition of the detailed user stories and scenarios showcasing the need for the CONNECT funtionalities:

1. Intersection Movement Assistance & Misbehavior Detection
2. Vulnerable Road User Protection through Cooperative Adaptive Cruise Control
3. Slow Moving Traffic Detection

These use cases will serve as demonstrations of the CONNECT framework's effectiveness and practicality in real-world scenarios.

## Main Project Info

The CONNECT project tackles the challenge of trust and safety in autonomous driving. In addition to functional safety requirements, trustworthiness management is integrated into CCAM's security functionality solution. The project establishes a trust management framework based on the zero-trust principle, which assesses dynamic trust relationships based on the providers of information. By combining the vehicle's sensors with cloud-based information, it expands the knowledge about the environment, enabling faster and safer decision-making processes. CONNECT aims to increase the safety of autonomous driving by facilitating cooperative and timely decision-making. Furthermore, the features of CONNECT address challenges in personal mobility and environmental sustainability, contributing to the development of advanced intelligent transportation systems. The CONNECT project introduces a new approach that elevates the trustworthiness of autonomous driving, leading to long-term consumer acceptance.

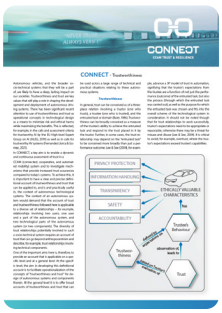
**WP7** Dissemination, Standardization, Exploitation & Impact Creation: An identification of partners participations in relevant clusters/associations was established. In addition, the project has made a contribution to ISO standardization work on the ISO Technical Committee 204 through the misbehavior detection use case. Furthermore, the data management plan has been completed and submitted to the EC.

# Media

## CONNECT Fact Sheets

To obtain additional and detailed information regarding CONNECT and the challenges associated with designing a Trust Management Framework, as well as the significance of making trust-based decisions, CONNECT has released two fact sheets. You can access the fact sheets by clicking on **this link**, ensuring a seamless and accurate exploration of the subject matter.

Fact Sheet 1



Fact Sheet 2

## Interviews with technical and scientific lead

There are two interviews available, offering valuable insights into the project's goals and challenges. These interviews provide both technical and general information, shedding light on the innovative aspects of the project and the difficulties encountered along the way. They serve as valuable resources for understanding the project's objectives and the collaborative efforts of the consortium in overcoming obstacles.


**In Talk with Frank Kargl the Scientific Lead**


**In Talk with Thanassis Giannetsos the Technical Lead**

The CONNECT consortium is formed by a diverse group of stakeholders with a wide range of abilities and expertise, making them well-equipped to address and overcome the challenges at hand.

The CONNECT project project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101069688.

## Past Events

**Kickoff Meeting**
22th-23th September 2022
@Athens, Greece

**ISO TC204 60th Plenary Meeting**
3rd-7th October 2022
@Tampere, Finland

**2023 IEEE Vehicular Networking Conference**
26th-28th April 2023
@Istanbul, Türkiye

**ISO TC204 61th Plenary Meeting**
15th-19th May 2023
@San Antonio, USA

**TPM.dev Conference Talk**
16th May 2023
@online

**ITS European Congress**
22nd-24th May 2023
@Lisbon, Portugal

**ACM WiSec 2023**
29th May - 1st June 2023
@Guildford, UK

**Dagstuhl Seminar**
11th - 16th June 2023
@Dagstuhl, Germany

**Trusted Computing Group (TCG) Meeting**
29th June 2023
@Berlin, Germany

## Upcoming Events

**ETSI Security Conference**
16th-19th October 2023
@Sophia Antipolis, France

**ICICS 2023**
18th-20th November 2023
@Guildford, UK

All past and upcoming events can be found on the CONNECT official webpage:

**horizon-connect.eu/events**