Publishable Summary of the InSecTT – Project

Artificial Intelligence of Things (AIoT) is the natural evolution for both Artificial Intelligence (AI) and Internet of Things (IoT) because they are mutually beneficial. AI increases the value of the IoT through Machine Learning by transforming the data into useful information, while the IoT increases the value of AI through connectivity and data exchange. Therefore, InSecTT – Intelligent Secure Trustable Things, a pan-European effort with 52 key partners from 12 countries (EU and Turkey), provides intelligent, secure, and trustworthy systems for industrial applications. This results in comprehensive cost-efficient solutions of intelligent, end-to-end secure, trustworthy connectivity and interoperability to bring the Internet of Things and Artificial Intelligence together. InSecTT aims at creating trust in AI-based intelligent systems and solutions as a major part of the AIoT.

InSecTT solutions were demonstrated in real-world environments such as airports, trains, ports, and the health sector - creating a huge impact on both high and broad level, from citizens to European stakeholders. InSecTT has brought intelligent solutions into the market by conclusive showcases all over Europe, hence strengthening Europe's industry and once more making European solutions a frontrunner in cutting-edge technology.

InSecTT was coordinated by Virtual Vehicle Research GmbH from Graz, Austria. In addition to coordination and project management. Virtual Vehicle also achieved significant results in terms of demonstrations and use cases: together with our partners, on one hand a demonstrator for Driver Distraction Monitoring Using Smartphones was implemented. On the other hand, Virtual Vehicle developed the vehicleCAPTAIN toolbox, a compact, modular, and flexible platform for quick and easy access to cooperative intelligent transportation systems (C-ITS), targeting especially startups and R&D applications.

VIF's efforts to develop the AI framework for Driver Distraction Monitoring Using Smartphones led to discussions with various small and medium-sized companies that are considering integrating the framework created for recognising driver distraction ("Driver Distraction Detection"). In addition, there was a lively exchange on the AI framework with other research projects, always with a view to generally increasing road safety with innovative solutions.

The vehicleCAPTAIN toolbox is used in many different places, including other projects. The final demo as part of the Smart Airport Use Case in particular shows the integration and cross-project use. It was possible to integrate the vehicleCAPTAIN Development Kit with the systems of partners Marmara University (Turkey) and Gdansk University of Technology (Poland) for a joint demonstration of autonomous mobility on Smart Aiports. The initial effort in the interface design also paid off: In particular, the new feature of ROS2 integration has greatly simplified the joint demonstration.

Finally, it should be emphasised that the vehicleCAPTAIN toolbox has become an integral part of our vehicle. Use cases can be used in different projects. The main reason is the deep integration through ROS2 and Autoware connection and the resulting possibility to create, exchange and integrate non-standard messages in the context of research projects.