



InSecTT Newsletter January 2023



## Welcome!

This is the **January 2023 edition** of the InSecTT newsletter, highlighting news & achievements from InSecTT during Q4 2022.

Please distribute this newsletter to all interested parties in your organization. We appreciate your feedback, please send comments or requests to [insectt@v2c2.at](mailto:insectt@v2c2.at).

Enjoy the reading!

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# Real-Time Inventory Management on Boats

Dec 21, 2022

ISS RFID sp. z o.o. within the InSecTT project works on Real-Time Inventory Management System that can increase both boat and crew safety. Necessary equipment like safety vests, fire extinguishers and other is equipped with RF tags that report that they are on board and ready to be used in case of emergency.

By using RF tags it can monitor in real-time if assets are still on board or if they are valid to be used. By using RF tags combined with security solutions, system will also alert unauthorized use of equipment.

When safety equipment like vest will have tags installed it can also inform when someone is overboard.



# Multimodal Positioning System (MPS) from GUT

Dec 13, 2022

Gdansk Tech within the InSecTT project works on Multimodal Positioning System (MPS), which enables indoor localization - the system consists of ESPAR antennas and Bluetooth Low Energy transmitters. Currently, MPS is installed in A&E (Accident and Emergency) zone in Copernicus Medical Facility located in Gdańsk, where medical equipment e.g. wheelchairs are being tracked.



# Westermo Data Set for AI and Security

Nov 24, 2022

Westermo is proud to be one of the partners in the InSecTT project – Intelligent Secure Trustable Things. Together with RISE, MDU, and TietoEvry, Westermo is collaborating to improve cyber security for industrial data communication systems using Artificial Intelligence.

One of the ongoing activities within the project is to collect a data set with network intrusions and human misconfigurations. AI is constantly learning and to improve there is a need for AI to learn new information. The data set will train distributed or federated AI in misconfigurations and cyber-attacks. The ambition is to use AI to take steps forward in the domain of cyber security for industrial data communication networks.



# Westermo Containers and InSecTT

Nov 21, 2022

As a partner in the InSecTT project, Westermo invest in designing, implementing and quality assuring a new container feature. Several Westermo products run the Westermo Operating System (WeOS), which is a critical part of many switches and routers in industrial applications. The new container feature enables many different types of applications to run in the devices.

The next step for the new container feature is to implement Artificial Intelligence (AI) to improve cyber security. By implementing AI the mission is to detect anomalies such as intrusions and misconfigurations. By connecting AI with the alarm system in WeOS, there are many promising possibilities in the future when creating secure industrial communication systems.

To read about Westermo's contribution to the InSecTT project, please refer to Secure Industrial Communications System at: <https://www.insectt.eu/use-cases/>



## Whitepaper: Development of Ethical and Trustworthy AI Systems

Nov 18, 2022

Whitepaper: Development of Ethical and Trustworthy AI Systems

The whitepaper written by Peter Moertl & Nikolai Ebinger (Virtual Vehicle) provides processes and guidelines to develop AI that is trustworthy from a user's perspective. Building on current guidelines and processes, the whitepaper proposes a human-system-integration (HSI) framework to define the required organizational structures. The whitepaper is available [here](https://www.insectt.eu/wp-content/uploads/2022/11/Trustworthiness-Whitepaper-InSecTT-Format-v02-1-1.pdf).

<https://www.insectt.eu/wp-content/uploads/2022/11/Trustworthiness-Whitepaper-InSecTT-Format-v02-1-1.pdf>

**InSecTT:  
Intelligent Secure Trustable Things**



**The Development of Ethical and Trustworthy AI  
Systems Requires Appropriate Human-Systems  
Integration: A White Paper**

**New Podcast available: Anamarija talks with Prof.  
Lukasz Kulas from Gdansk University**

Nov 11, 2022

In this episode, Anamarija talks with Prof. Lukasz Kulas from Gdansk University about smart ideas for using secure connected things in real life. For example, about retrofitting ships and harbors, or localizing medical devices in a hospital. Lukasz has also organized Open Innovation and Student Contests, and talks about how creativity can lead to cool innovations. These are good examples for bringing students, scholars and industry together to spark new ideas (and have fun).

Go to <https://podcasts.apple.com/at/podcast/project-insectt/id1605747720>



# What about MLOps?

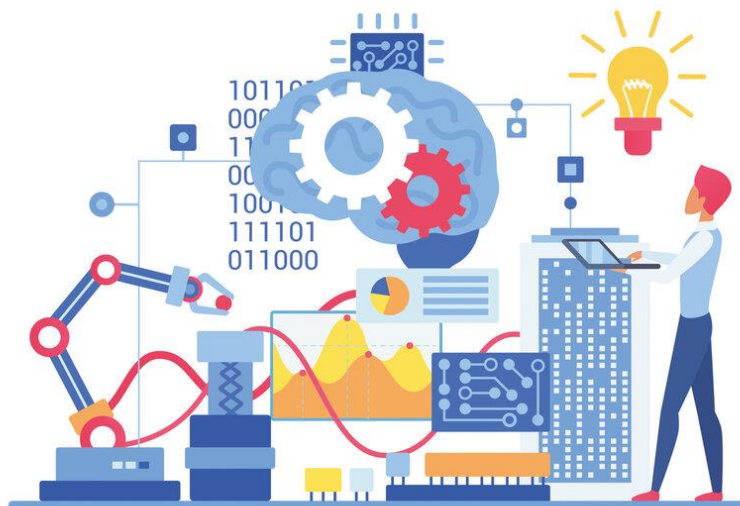
Nov 10, 2022

MLOps is a set of practices that aims to deploy and maintain machine learning models in production reliably and efficiently (source: <https://en.wikipedia.org/wiki/MLOps>).

In InSecTT project Wapice is researching MLOps frameworks for managing intelligent algorithms throughout their lifetime. Key research areas are to find solutions that

- Are reliable and trustworthy
- Are platform independent and avoid vendor locks that might turn out problematic later
- Offer easy and powerful model lifecycle management
- Offer quick time to market by enabling rapid model deployment and value creation
- Still provide freedom of choice for data scientist to choose the best available tools for each use case

By improving methodology how to effectively and easily deploy and host algorithms in different IoT ecosystem components we can respond to the demand of rapid prototyping of AI and machine learning concepts.

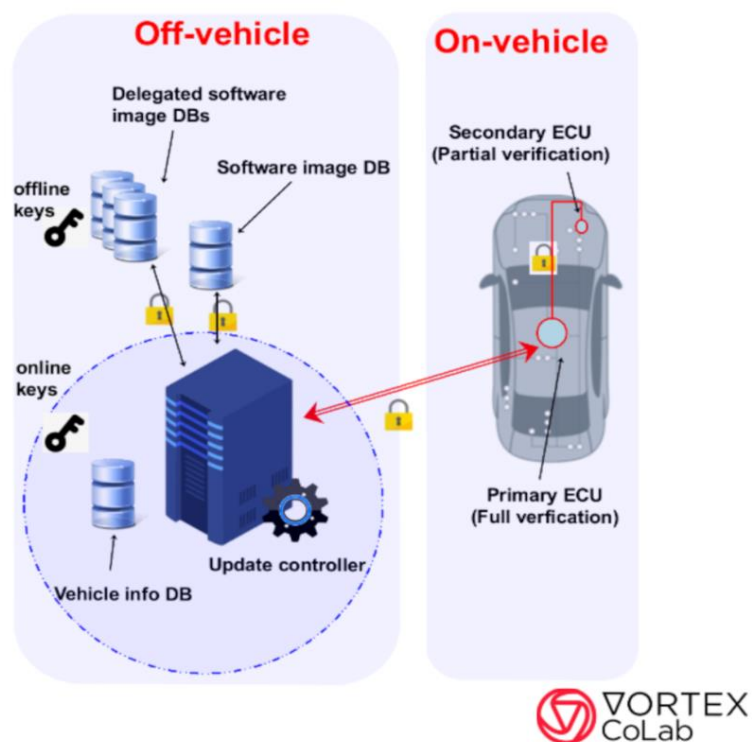




# Trust for secure Over-the-air (OTA) updates

Nov 7, 2022

As vehicle platforms modernize, OEMs are integrating the capability to remotely update the vehicle's electronic components software. Although OTA updates have a lot of benefits, they also widen the attack surface of a vehicle. OEMs must ensure the security of this process as more and more regulatory bodies are mandating vehicular cybersecurity. The OTA solution developed by VORTEX follows the Uptane standard, which is the current state of the art for vehicular updates. It implements the full E2E stack, including secondary ECUs. In InSecTT, VORTEX works on extending the trust-chain to other elements of the ecosystem and hardening the OTA update process as a whole.



# Trust for IoT

Nov 3, 2022

In a world pushing towards connected everything, it is more and more critical to ensure that IoT devices are secure. The InSecTT project's partners are working in solutions to create secure, safe, reliable, and trustworthy things. Trustworthiness means you can be at ease while using domotics (the control of domestic appliances by electronically controlled systems) in your house, or while checking your car's status on the app. It also means a push to Industry 4.0 with process automation and increased efficiency, and even more quality control with less defects. The InSecTT project aims at providing solutions for these environments.



# Innovative Research Collaboration within InSecTT

Nov 2, 2022

Innovation is one of the cornerstones of research collaborations!

The innovative hybrid--remote and in-person--research collaboration between Gdansk University of Technology (GUT) and RISE Research Institutes of Sweden within EU Project InSecTT has led successfully to fostering intra- and inter-project research collaborations. Augmenting the jamming mitigation technology for reconfigurable antennas--piloted at a number of safety-critical industrial use cases--with an intelligence-driven optimization technique for online decision-making, which led to unprecedented desired results; kicking start the development of the ML-assisted variant of the existing localization technology to make it smarter and more accurate, and concertizing more steps of the data analysis pipeline for TUCANA autonomous boat in the Polish Maritime industry, are among the early achievements of their collaborative works.

The collaboration is led by the head of the digital technology center at GUT, Prof. Łukasz Kulas, and driven by Dr. Mahshid Helali Moghadam from RISE and Mateusz Rzymowski and Mateusz Groth from GUT.



Gdansk University of Technology 

## ML Systems: Powerful Engines to Drive Maritime Industry

From design principles to ML operation  
(Part 2)

Mahshid Helali Moghadam  
RISE Research Institutes of Sweden

October 2022

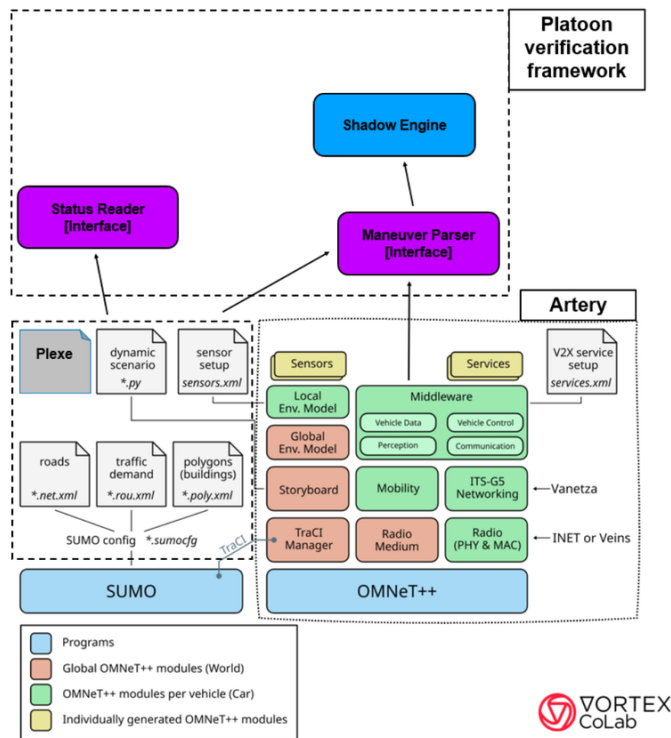
RISE



## Safe platooning applications

Oct 24, 2022

On the InSecTT project, Vortex is researching towards safe platooning applications. Platoons are a "train" of (usually trucks) that work as a single unit, where all the elements share a portion of the route, and keep themselves at the same speed and inter-truck distance. This technology promises fuel saves up to 20%, as well as reducing the fatigue on follower trucks since the driver only has to react to alerts. In the project, Vortex is developing a framework that monitors maneuver execution such as the trucks have to change lanes or overtake another vehicle, that these maneuvers are executed correctly.



## Keynote at "Augmenting humans with AI-driven knowledge", VTT, Espoo, Finland

Oct 14, 2022

Ken Brown of UCC gave on October 5th 2022 the keynote talk on AI and IoT for supporting humans, as part of the event "Augmenting humans with AI-driven knowledge" at VTT, Espoo, Finland.



# Cyber Security Month

Oct 13, 2022

October is Cyber Security Month 2022. This year's themes are phishing and ransomware. UCC is one of many participants, offering talks on cyber security in UCC, technology assisted abuse and much more.



## Successful Y2 Review at Brussels!

Sep 30, 2022

The InSecTT project has started mid-2020. After a virtual-only review last year, the InSecTT consortium is happy (look at the faces!) to meet again in person in Brussels, Belgium at the JU to do the review of the 2nd year results. After two days fully packed with presentations and demonstrations we can report a successful Y2 Review. A big thanks for the good feedback and advise received by the project officer @Francisco Ignacio and the reviewers @Birgitte Lønvig and @Stamatis Karnouskos

