



Press Release

Wednesday, 28th May 2024

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TELEMETRY: Enhancing Cybersecurity in IoT Ecosystems with Trustworthy Tools and Methodologies

The TELEMETRY project, a European Union's Horizon Europe initiative, is set to revolutionize the security landscape of IoT devices and systems. This ambitious project aims to develop and validate innovative and trustworthy tools and methods for testing and detecting security vulnerabilities in IoT environments. The project will conduct three pilot programs in the telecoms, aerospace, and manufacturing sectors, ensuring broad applicability and impact. These pilots will showcase improvements in threat and vulnerability detection accuracy, response time, and the cost of testing and verification.

Specifically, the TELEMETRY project aims to support the creation and sustainability of resilient digital infrastructures, systems, and processes through continuous vulnerability and risk analysis of IoT components and ecosystems. The project addresses all aspects of the IoT lifecycle, from development and integration to operation by providing trustworthy tools for continuous assessment of heterogeneous, interlinked components and systems.

In fact, TELEMETRY outlines five specific objectives to ensure its long-term impact: a) establishing holistic testing methodologies and integrating tools into a comprehensive toolkit, b) providing tools for vulnerability detection and secure updates, c) managing cyber threat intelligence and risk, and d) grounding the project's innovations in real-world IoT ecosystems.

Within this spectrum, the project team creates advanced methods for identifying and mitigating security vulnerabilities in IoT devices, such as machine-learning models and algorithms for real-time anomaly detection, dynamic risk assessment to simulate threat consequences, reputation management, and privacy-preserving data sharing. Additionally, TELEMETRY includes an IoT device emulation and analysis environment and lightweight

approaches for trusted updates. These advancements will promote continuous improvement and assurance across both design and runtime phases.

Last but not least, TELEMETRY project fosters collaboration, by involving leading experts from academia, research institutions, and innovative private companies in the ICT, telecoms, aviation, manufacturing and consulting industries. These are Nokia Solutions and Networks GmbH & Co. KG in Germany, SINTEF AS in Norway, Munster Technological University in Ireland, Data Analytics for Industries 4.0 in Spain, Athens Technology Center in Greece, KU Leuven in Belgium, Telecom Italia S.p.A. in Italy, Engineering Ingegneria Informatica in Italy, World Research Center of Vortex Energy in Ukraine, ANTONOV Company in Ukraine, and the University of Southampton in the UK.

Mr. Robert Seidl, Research Manager at Nokia Bell Labs, expressed his belief that through collaboration, innovation, and rigorous testing, the project will deliver tools that enhance security across various industries, benefiting businesses and citizens alike and also stressed the importance of EU investment in IoT security: *“The TELEMETRY consortium is dedicated to developing reliable tools, techniques, and holistic methodologies for cybersecurity testing and vulnerability detection at both component and system levels. Led by Nokia, TELEMETRY will showcase these advancements through three real-world use cases in aviation, smart manufacturing, and telecommunications.”*

The shift towards license-free open-source code, cloud services, and distributed open networks highlights the importance of TELEMETRY's tools and techniques for managing complex systems. This project emphasizes the consortium's commitment to enhancing cybersecurity across diverse industrial sectors”.

The TELEMETRY project held its kick-off meeting in Munich from September 12-14, 2023, hosted by NOKIA. This initial gathering set the stage for collaboration and outlined the project's roadmap. The following key event was the project plenary meeting held in Rome from March 12-14, 2024, hosted by Engineering, where significant progress and future steps were discussed. During this meeting, we aligned on the architecture and finalized tool descriptions for use across different cases, setting a clear direction for future development.

Disclaimer:

The project is funded by the European Union under grant agreement ID 101119747. Views and opinions expressed are, however, those of the author (s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them.