



H2020-SU-ICT-2019 - Grant agreement ID: 952622

SPIRS workshop (June 4, 2024)

Place: Thessaloniki, same venue as the IFIP Networking 2024 (<https://networking.ifip.org/2024>)

SPIRS (Secure Platform for ICT systems Rooted at the Silicon manufacturing process) - <https://www.spirs-project.eu/> - is a EU-funded H2020 project that developed a secure and trusted platform for network applications. This includes an open-source hardware root-of-trust (as an additional component for a RISC-V platform), the open-source Keystone Trusted Execution Environment (modified to support the root-of-trust and DICE-based modern integrity attestation). Secure management of this platform is performed via IKE-less IPsec channels, and monitored via remote attestation. Examples of practical applications are in the 5G scenario (for edge nodes) and the Industry 4.0 environment (for secure and trusted communication among machines and back-end).

This workshop presents the ideas and results of SPIRS, identifies the reusable practical results, and solicits interaction with the networking and security communities for take-up and further developments.

JUNE 4, 2024 (GREEK TIME, I.E. UTC TIME + 3 HOURS)

15:30 – 15:35	Welcome to the SPIRS Workshop Workshop organizer, <i>A. Lioy – Politecnico di Torino (Italy)</i>
15:35 – 15:50	Introduction to SPIRS Project coordinator of the SPIRS project, <i>P. Brox – CSIC (Spain)</i>
15:50 – 16:05	The TNED (Trusted Network Environment for Devices) concept The Trusted Network Environment for Devices (TNED) leverages Trusted Execution Environments (TEE) to create a secure enclave for devices connecting to a network. This isolated environment allows for secure processing and transmission of sensitive data, while its integration with network management facilitates centralized control and policy enforcement, ensuring a trustworthy environment for all connected devices. <i>A. Pastor – Telefónica (Spain)</i>
16.05 – 17:35	TNED implementation and ecosystem <ul style="list-style-type: none">- Root-of-Trust and TEE (Trusted Execution Environment) Implementation of a hardware root-of-trust (for secure identity and cryptographic operations) coupled with an open-source TEE to protect trusted applications. <i>M.C. Martínez-Rodríguez (CSIC) and Nicola Tuveri (TAU)</i>- TNED Operation and Management, Orchestration and Life Cycle Management (LCM) of Trusted Cloud Native Applications for telco-services in a RISC-V based compute architecture with TEE. <i>G. Yilma – NEC Research Labs (Germany)</i>



	<ul style="list-style-type: none"> - Centrally Controlled IPsec (CCIPS) In order to reduce complexity and simplify management, SPIRS adopts a centralized and IKE-less approach to manage IPsec channels towards the TNED <ul style="list-style-type: none"> o CCIPS Agent in open-source SDN controller and Enarx <i>M.Elorza – Telefónica (Spain)</i> o CCIPS Agent in the TNED with Keystone <i>G.D'Onghia – Politecnico di Torino (Italy)</i> - TNED integrity verification via DICE, TPM, and Remote Attestation SPIRS implements a solution to remotely verify the authenticity and integrity of each TNED. This permits quick detection of compromised nodes, that can be taken off-line (e.g. via SDN) and replaced with other instances. This exploits classical (TPM and Remote Attestation) and modern solutions (DICE, the Device Identifier Composition Engine). <i>S.Sisinni – Politecnico di Torino (Italy)</i> - Policy Compliance checking services through an API Gateway As an additional security component, SPIRS includes a composition of compliance checking services for applications running inside Trusted Execution Environments via an API Gateway. <i>G.Mamuye/M. Liebsch – NEC Research Labs (Germany)</i>
17:35 – 17:50	TNED use case in 5G networks and Industry 4.0 Being a trusted and secure application environment, the TNED finds usage in 5G networks and Industry-4.0 cases, illustrated in this talk. <i>M. Liebsch – NEC Research Labs (Germany)</i> <i>A.Vesco – LINKS Foundation (Italy)</i>
17:50 – 18:00	Open discussion and closing of the SPIRS workshop
18:00-19:00	Meet the speakers and SPIRS – party (only for workshop attendees)