



The Standards People

ETSI Research Conference 2023

Maximizing the Impact of European 6G
Research through Standardization

Project Presentation: SUPERIOT

Marcos Katz, University of Oulu, Finland

6G SNS

08/02/2023

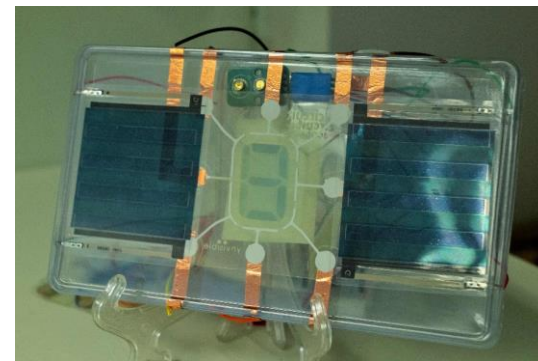
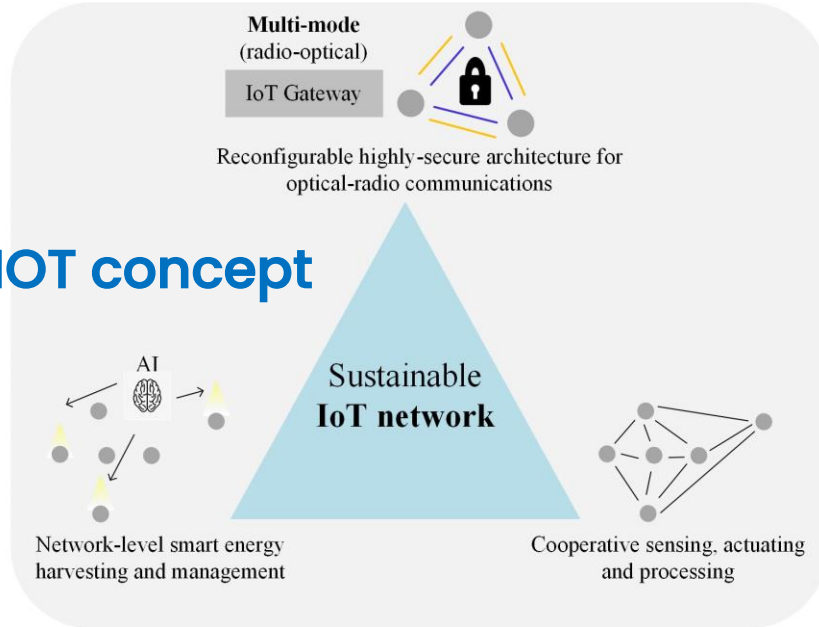
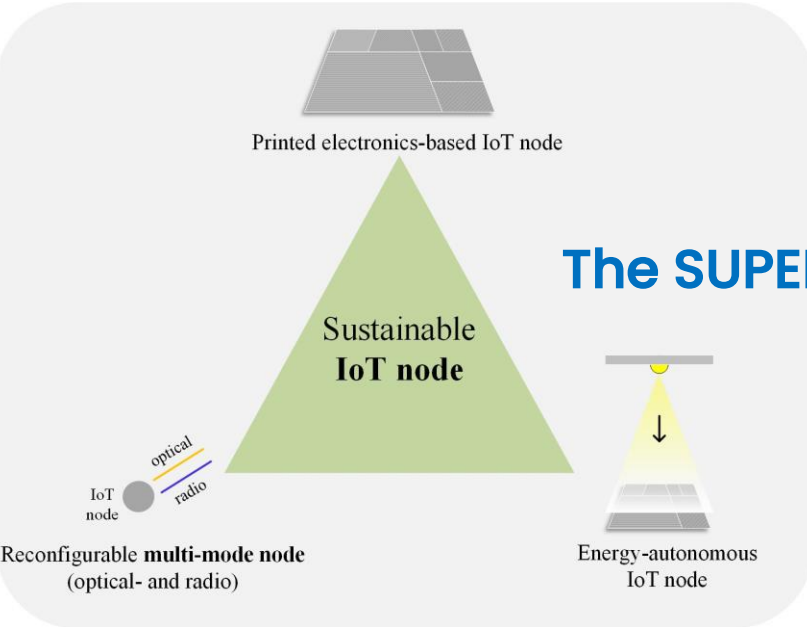


1. Project Overview

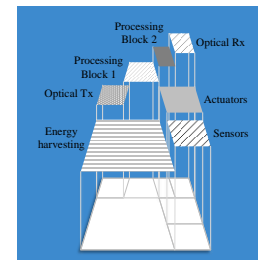
- **Project Name:** SUPERIOT
 - **Project website:** superiot.eu
- **Stream:** STREAM-B-01-03
- **Members:** University of Oulu (FI), INESC TEC (PT), VTT (FI), NOVA (PT), IMEC (NL), LIGHTBEE (ES), MPICOSYS (PL), KU Leuven (BE), University of Bristol (UK), VIVID Components (DE), WAVECOM (PT).
- **Other:** Budget: €5M; duration: 3 years; demonstrators: 4
- **Keywords:** truly sustainable IoT, printed electronics, optical communications, radio communications.
- **Verticals:** logistics, industry, healthcare, consumer market, wearables.

2. Technical Information

- **Project Key Objectives:** Demonstrate: **a)** the concept of truly sustainable IoT, **b)** reconfigurable dual mode IoT (radio-light), **c)** dual mode energy harvesting, **d)** dual mode positioning, **e)** implement IoT nodes based on printed electronics, **f)** build four proof-of-concept demonstrators.
- **Key technologies used/investigated:** hybrid radio-optical wireless communications, reconfigurable IoT, printed electronics technology



Energy autonomous light-based IoT node



Long-term goal: fully printed IoT nodes

3. Planned Standardization Activities

- **Standardization plans / objectives:**
 - To create an impact on standardization: communications, positioning, sustainability, printed electronics technologies.
 - The dual-mode IoT system offers a fertile ground for developing new ideas and concepts focused on adaptability, flexibility, security, reliability, optimizability, and performance of the system. These have a great potential to become patents and important contributions to future standardization.
- **Project activities / technologies that may lead to standardization:**
 - Dual mode operation/reconfiguration
 - Communications (Tx/Re solutions, protocols, network selection algorithms, etc.)
 - Energy harvesting and management (Energy-sharing approaches, AI-based energy management, etc.)
 - Positioning
 - Printed electronics solutions (components, inks, sub-systems, etc.)

3. Planned Standardization Activities

- **Potential targeted standardization bodies / groups:**

- IEEE802.15 (Bluetooth, UWB, optical WPAN)

- IEEE80211bb, ITU-T G.9991 (VLC/LiFi)

- ETSI

- IEC on Printed Electronics.

- **Standardization planning and estimated time plan:**

- The standardization related activities are planned to start once the project has sound evidence of the developed concepts and most suitable technologies.

- Possible solutions and standard-related technologies, as described above, will be investigated and evaluated in the initial part of the project.

- Standardization activities will take place during the second half of the project.



International
Electrotechnical
Commission