Maximizing the Impact of European 6G Research through Standardization

Project Presentation: SUPERIOT

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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
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.