



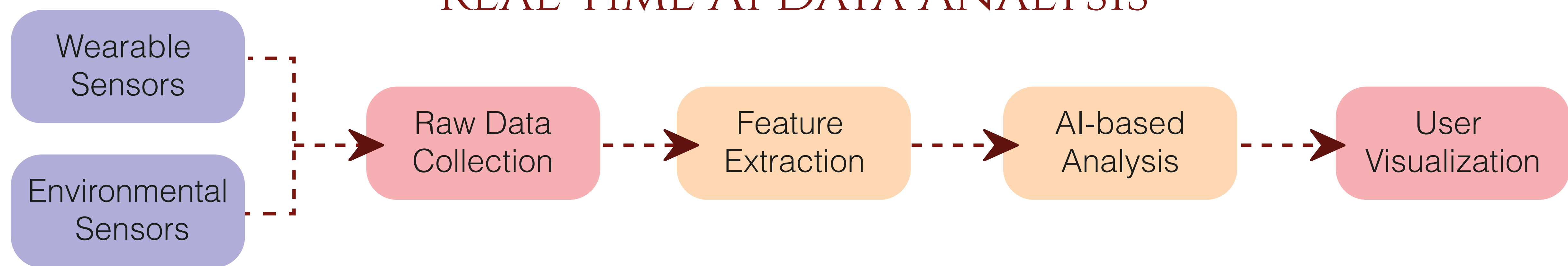
CYBER-SECURE WEARABLE, ULTRA-LOW-POWER NETWORKED SENSORS FOR SOLDIER HEALTH MONITORING

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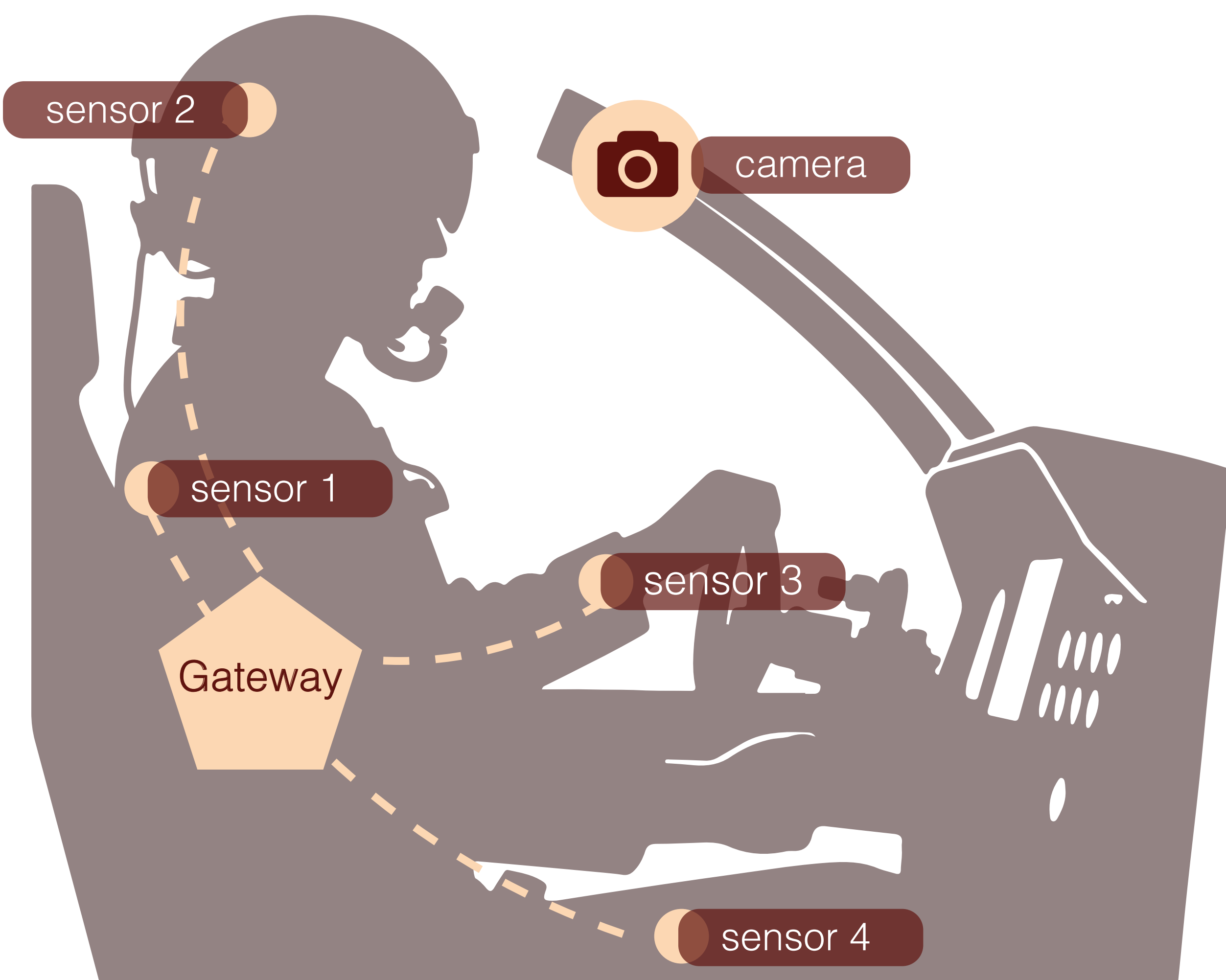
OVERVIEW

The CAPSARII project proposal aims at developing an innovative smart textile/wearable device and related ICT framework to display raw health data and Machine Learning (ML)-derived insights, designed specifically for military staff, which aligns with the concept of the **Internet of Battlefield Things (IoBT)**, driven by **Artificial Intelligence (AI)** and edge computing, aiming to transform the monitoring of soldiers' psycho-physical conditions and the evaluation of their performance, both in combat and training scenarios, thus allowing for **real-time health status assessments** through a specialized ML model. Real

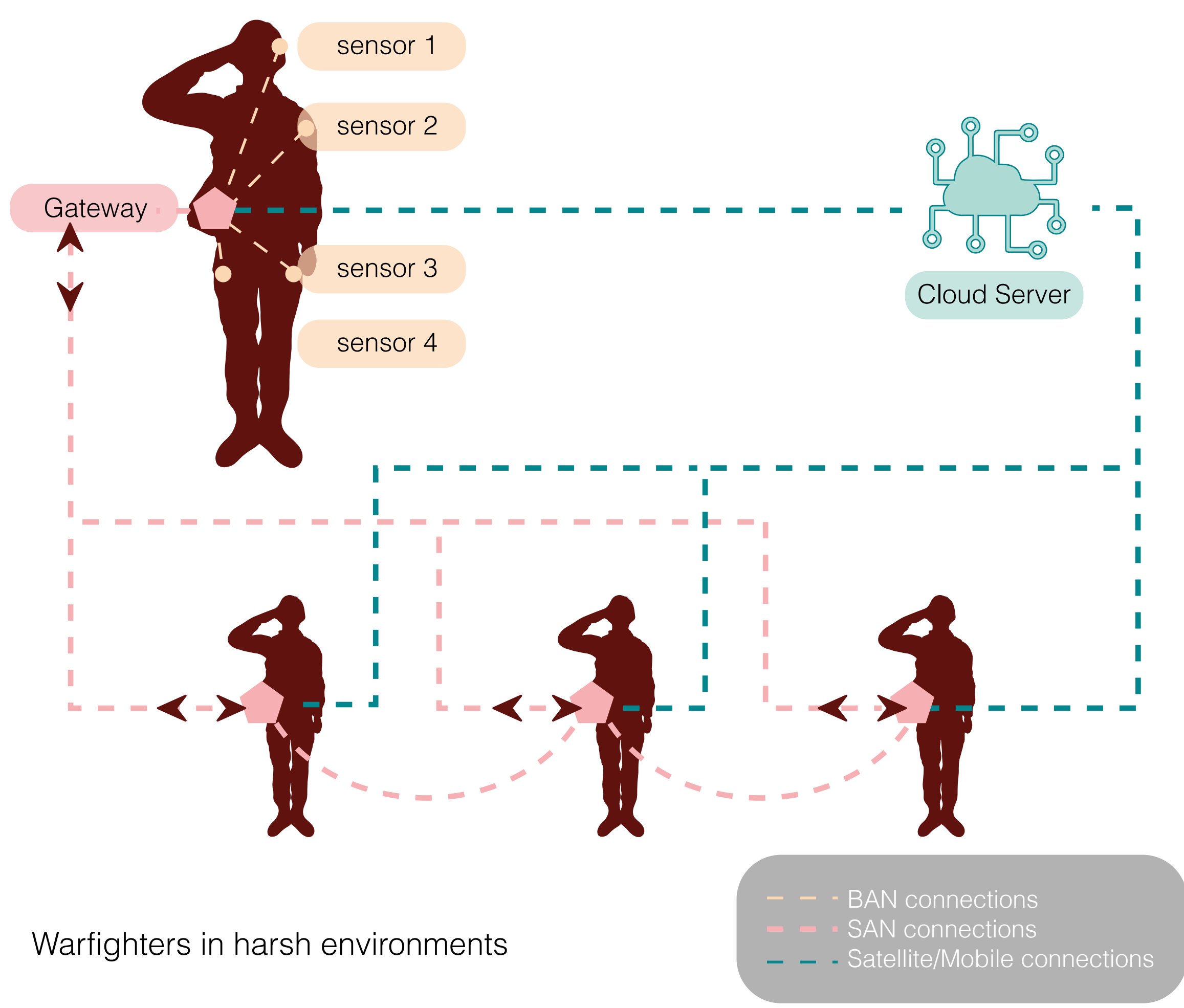
REAL-TIME AI DATA ANALYSIS



UC1 PILOT FATIGUE



UC2 WARFIGHTERS

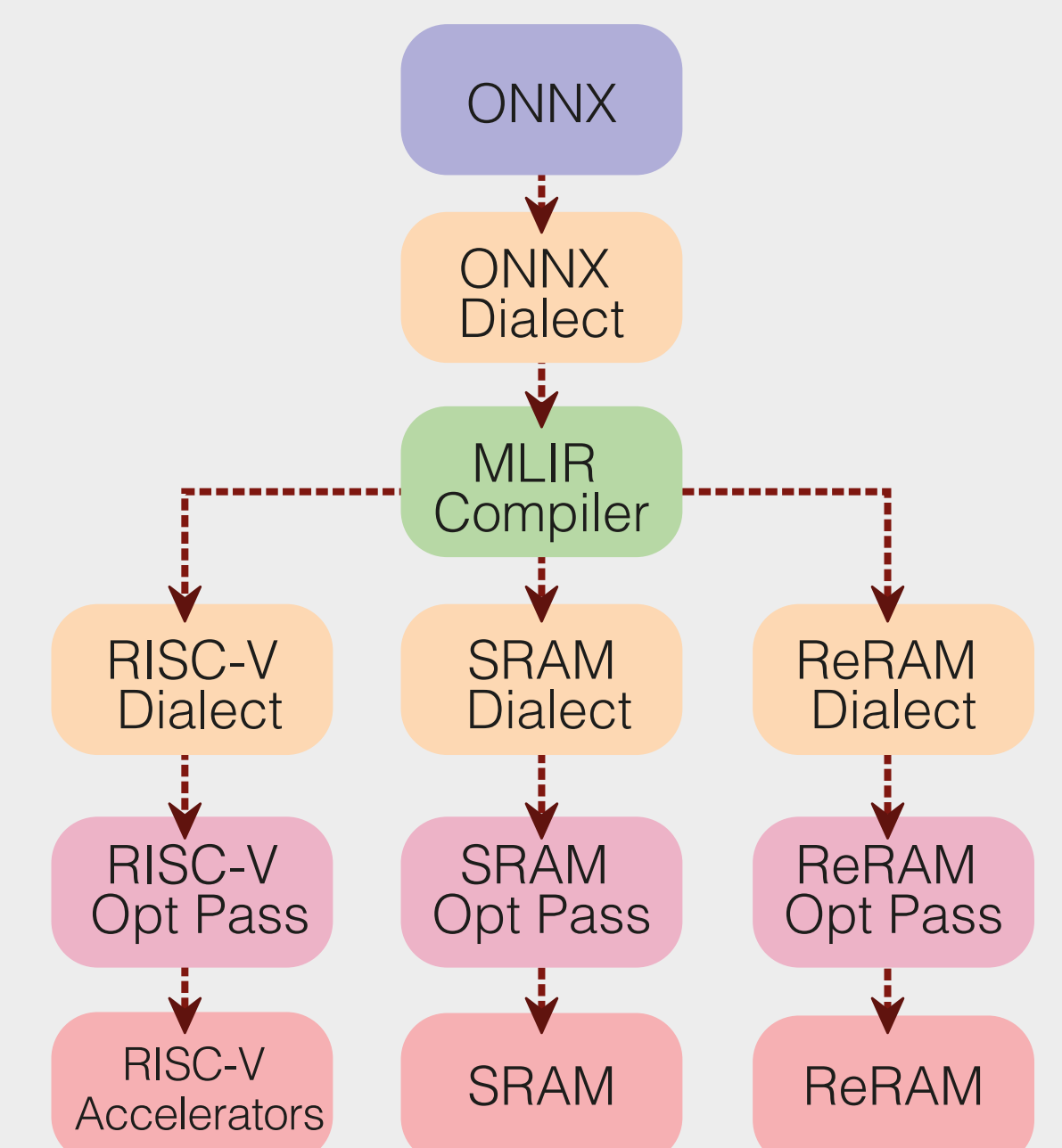


SECURITY ASPECTS

- Identification of threat model for data in transit and at rest
- Device identity for Squad Area Network (SAN) scenarios
- Security guarantees vs emerging quantum computing threat
- Compatibility of security overheads with system energy / performance goals

ULP PLATFORMS

- Explore emerging technologies for low-power AI:
 - Processing-In-Memory (PIM): ReRAM, SRAM, etc.
 - RISC-V-based multi-core accelerators
- Explore ultra-low-power RISC-V solutions and their integration with sensors



FUNDING AND DISCLAIMER

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