

MOTIVATION

Heating, cooling, and ventilation systems account for 30-40% of buildings energy consumption. But we still heat/cool buildings and not people. Personal comfort is the most promising approach to reduce such consumption, but its feasibility and performances are not demonstrated.

WEPOP

WEPOP is a research project with the main objective of developing a multi-sensing platform, which includes wearable sensors, environmental sensors, and artificial intelligence (AI) algorithms to enable personal comfort management systems.

WEPOP

This research was co-funded by the Italian Ministry of Research through the WEPOP (Prot. 2022RKL3J) “WEearable Platform for Optimised Personal comfort” project, within the PRIN 2022 program.

PARTNERS



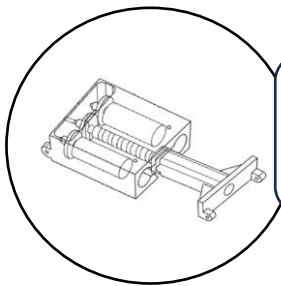
**WEearable PlatfOrm for
Personalized comfort**

OBJECTIVES

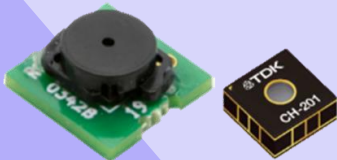
WEPOP will demonstrate how wearable technologies, integrated with environmental systems and artificial intelligence algorithms, can be used to develop personalized solutions that can improve comfort and productivity with up to 10% of energy savings.

OUTCOMES

WEPOP will release a modular platform for testing and developing personal comfort solutions for different use cases, prototypes for physiological and environmental sensing, pre-trained prediction models, algorithms for personal comfort management, and open datasets.

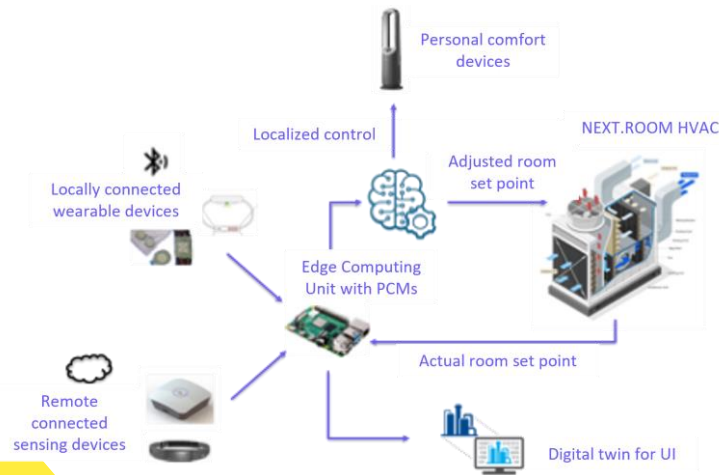


Auto-tightening system for improved physiological sensing



INSIGHTS

The fusion of physiological, environmental and personal data can feed the creation of new prediction models significantly improving the capacity of monitoring the real comfort perceived by the occupants to trigger an optimized response of HVAC and lighting systems. The recent progress in the field of wearable devices, IoT sensors, and AI fostered a growing number of research activities to demonstrate the feasibility of personal comfort models (PCMs) starting from the combination of physiological and environmental sensors and AI technologies.



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Finanziato dall'Unione europea NextGenerationEU



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The research has been funded by European Union, next Generation EU, Mission 1 Component 2, through the WEPOP (Prot.2022RKLBJ) "WEearable Platform for OptImised Personal comfort" project, within the PRIN 2022 program.