Smart Robot AIREC that is Close to One Person for a Lifetime

Project manager

(selected in 2026)

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Leader's institution

Waseda University

R&D institutions

Waseda University, The University of Tokyo, Hitachi, Ltd., NCNP, The University of Edinburgh, AIST, Kyoto University, Kobe University, Meijo University

Summary of the project

We aim to develop a versatile humanoid robot, AIREC (AI-driven Robot for Embrace and Care), capable of supporting humans in real-world applications such as welfare and caregiving, where severe labor shortages are imminent. AIREC will perform a wide range of highly complex physical tasks and engage in real-world communication with humans through emotions generated from its own embodied system. Specifically, we will pursue innovation of high-power humanoid robot bodies designed for integration with end-to-end AI, and realization of diverse physical tasks through deep predictive learning and robot foundation models, thereby advancing AI and robotics together. Through these efforts, we will implement physical support tasks that involve interaction with humans, as outlined below.



Household task support



Transfer assistance between bed and wheelchair

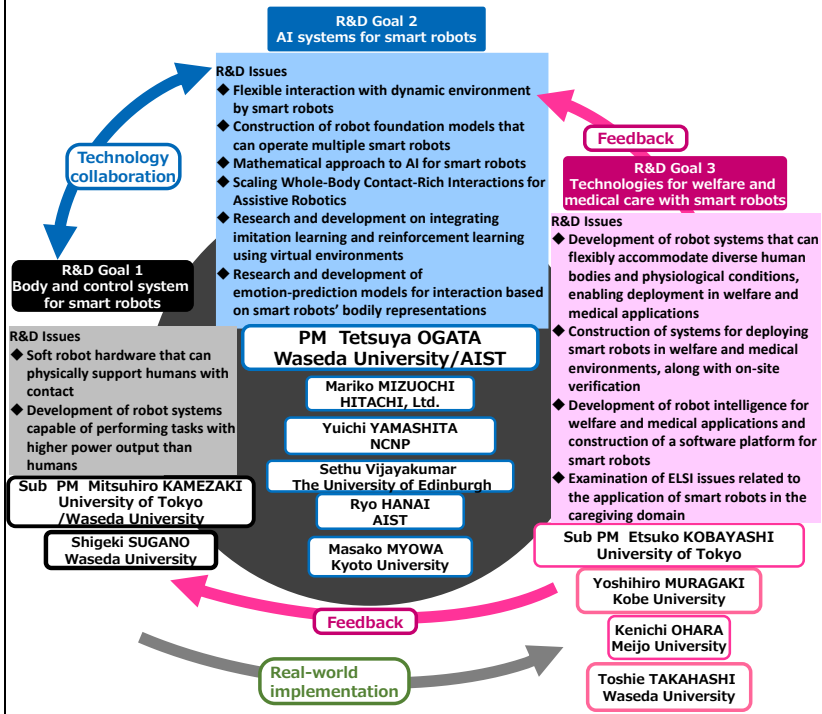
Milestone by 2030

By 2030, we aim to realize diaper-changing tasks using smart robots — a representative care activity that encompasses all fundamental caregiving and nursing actions such as repositioning, wiping, and dressing/undressing, and for which the demand for support in real-world care applications is extremely high.



Bedside care support using smart robots

Project structure



JST Japan Science and Technology Agency