CALL FOR PARTNERS

CARELOGIX

Partner call open until: July 15, 2026 Project start: September 1, 2026

Digital Twin for clinical logistics

Hospitals are highly complex, dynamic systems in which patient flows, staff movements, medical devices, and, increasingly, autonomous assistance systems interact simultaneously. These processes run in parallel, influence one another, and are continuously shaped by medical, organizational, and infrastructural conditions.

Despite advancing digitalization, there is currently a lack of integrated models that comprehensively capture these processes, realistically map them, and make them systematically analyzable. As a result, potential for optimizing processes, resource utilization, capacity planning, and collaboration between people, medical technology, and robotics often remains untapped.

Project Objective

The project aims to develop a modular simulation platform as a digital twin of clinical environments. By integrating computer vision, tracking technologies, and data-driven models, hospital logistics and clinical workflows are to be simulated realistically and specifically optimized to sustainably improve efficiency, coordination, and quality of care.

Partners needed

- **Hospital management** and clinical parnters
- **Robotics** and **autonomous systems**
- **Computer Vision & Tracking**
- Simulation and digital twin development
- **Operations research** / optimization

Expected outcomes

- **Workflow** and **process modeling** of clinical environments
- **Vision-based tracking** (people and equipment)
- Dynamic **simulation** and **rendering** frameworks
- Integration of **robotic systems** into optimization models
- **Multi-agent simulation** (human - machine)
- **Optimization algorithms** (e.g. reinforcement learning, heuristic methods)
- **Data protection** and **ethical aspects** in clinical environments

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