

# IHI Call Days | Call 9

## Healthcare in Extended Reality Environment to Aid in Chronic Treatments

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IHI brokerage platform:

- Healthcare in Extended Reality Environment to Aid in Chronic Treatments  
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- Proposal acronym HERE2ACT

## Healthcare systems worldwide - multiple critical issues:

- Increase and aging of population (+42% over 65 by 2034, +21% new cancer cases by 2040)
- Lack of doctors (-18M healthcare operators by 2023)
- Expenditure of the entire system (\$8 trillion each year, \$1.5M is the cost per student in medical training)
- Serious consequences of medical malpractice - Deaths during and after surgery and their cost (\$8M per year)

Our proposal falls under **IHI Call 9 Objective 4**: Exploit the full potential of digitalisation and data exchange in healthcare.

### **HUVANT** proposes a new high-tech approach to medical practical training and pre-operative planning, to:

- Reduce costs and times connected to doctors' education;
- Limit medical error;
- Increase health ROI and create skilled professionals;
- Take care of patients and their uniqueness;
- Decrease lawsuits.

**HUVANT** is a **phygital** (physical+digital) **customizable simulation platform** that allows students, residents and experienced doctors to simulate surgical interventions in a risk-free environment.

In detail, our platform consists of the integration of the following elements:

- **Physical models**
- **Virtual models** (digital twins of the synthetical ones);
- **Interconnection between physical and digital models;**
- **Artificial Intelligence algorithm.**

**HUVANT** solution is born to address a **public interest: every patient's health.**

Our simulation service is addressed to:

- **healthcare facilities, universities, associations, scientific societies and simulation centers** for healthcare professionals' training;
- **pharmaceutical and medical device companies** for surgical planning with devices and product demonstrations.

HUVANT offers a **cross-sectoral initiative**, which covers different industrial domains:

- 3D manufacturing;
- Extended Reality;
- Advanced Network Infrastructures;
- Artificial Intelligence;
- Data elaboration.

- Our team is able to deliver 150 digital models in **1-3 hours** with <2% deviation across formats. Digital organ models are ready **within a day** from CT, MRI, or AI data; haptic models require **6-10 days**, and immersive reality is fully integrated in **15 days**.
- Our patient-specific models and 3D-printed prototypes can incorporate XR, VR, and AR **directly into surgical tools**, ensuring smooth adoption and clinical impact.
- Our proposal can strengthen EU health competitiveness via innovative partnerships through XR integration into **everyday clinical settings**.
- Our approach fosters **greater doctor-patient trust** with improved consent processes, visual clarity on procedures, fewer post-surgery complications, and faster recovery times.

- Our **partners and collaborators** include the IRCCS "Carlo Besta" Neurological Institute Foundation and the University of Milan's Departments of Physics and Biomedical Sciences. Our **expertise** spans medical-surgical specialties, software development, multi-material additive technology, product design, data management, and processing.
- **We seek partners** in surgical simulation, healthcare education, and medical device testing **to broaden our immersive reality solutions**, currently covering 12 fields, including neurosurgery and oncology. **We are interested in experts** in medical simulation technologies **looking to transition into XR**, as well as collaborators who can expedite the adoption of these technologies in clinical settings.
- As part of a project, we offer in-kind contributions, including equipment and services under the **IKOP category**.

**HUVANT** is a spin-off of the University of Milan, born in March 2023 as a continuation of a research and development project financed by the Lombardy Region in the period 2020-2022, as part of the POR FESR 2014 -2020 program. HUVANT is a medical and surgical simulation platform that combines and integrates haptic and virtual models of organs and anatomical parts in a single high-tech simulation solution for practical training.

<https://huvant.com/>

