PGU MEDTEC



Call for international collaboration in Human twin

Post on EIT Health plaform

Calls interest :

- *Virtual Human Twins (VHTs) for integrated clinical decision support in prevention and diagnosis HORIZON-HLTH-2027-03-TOOL-04*
- *Development of predictive biomarkers of disease progression and treatment response by using AI methodologies for chronic non-communicable diseases HORIZON-HLTH-2027-02-TOOL-01-two-stage*

Executive Summary

PGU MEDTEC is a French MedTech startup specialized in the development of anatomically realistic 3D human digital twins for healthcare applications, including medical education, virtual training, and pre-clinical simulation for orthopedic medical device development and testing.

We are seeking European consortium partners, including medical imaging data holders, healthcare institutions for beta testing, and research organizations such as laboratories specialized in biomechanics, biomarkers, medical mathematics, computational population modeling, and AI for health.

Our shared objective is to establish a large-scale, ethically compliant database of medical imaging data, particularly in the fields of **orthopedics, musculoskeletal health, and obesity**, to improve anatomical diversity and realism in digital human twins.

PGU MEDTEC offers the transformation of imaging datasets into articulated 3D digital twins representing skeletal structures, muscles, adipose tissues, and external body morphology. These models can support biomedical research, personalized medicine R&D, healthcare innovation, education, and virtual training.

By combining diverse imaging datasets with advanced digital twin technologies, the consortium aims to accelerate innovation in predictive medicine, virtual patient simulation, and next-generation healthcare education solutions.

What PGU MEDTEC brings to the consortium

- Expertise in the generation of anatomically realistic human digital twins from medical imaging data.
- Human body models integrating skeletal, muscular, adipose, and external body morphology layers.

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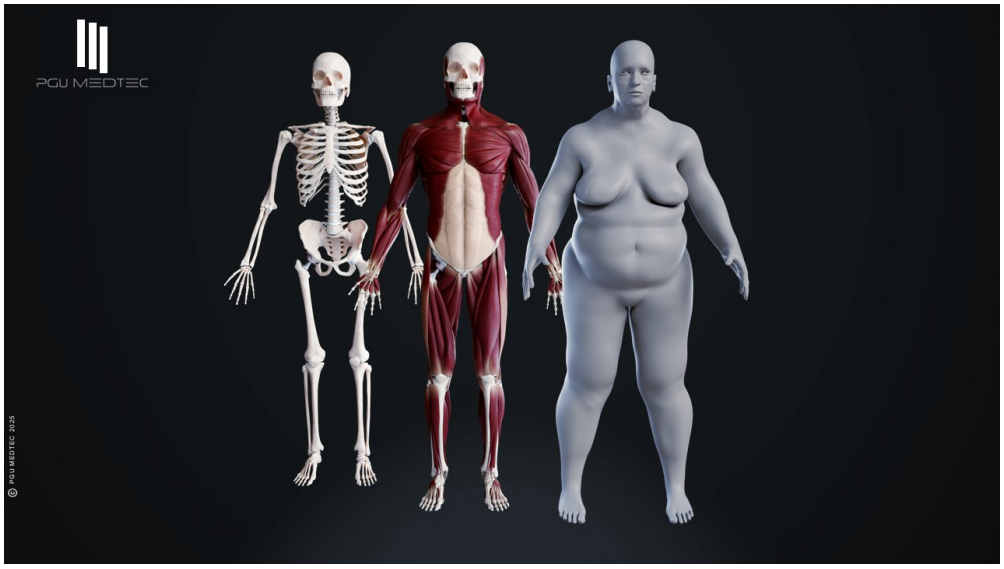
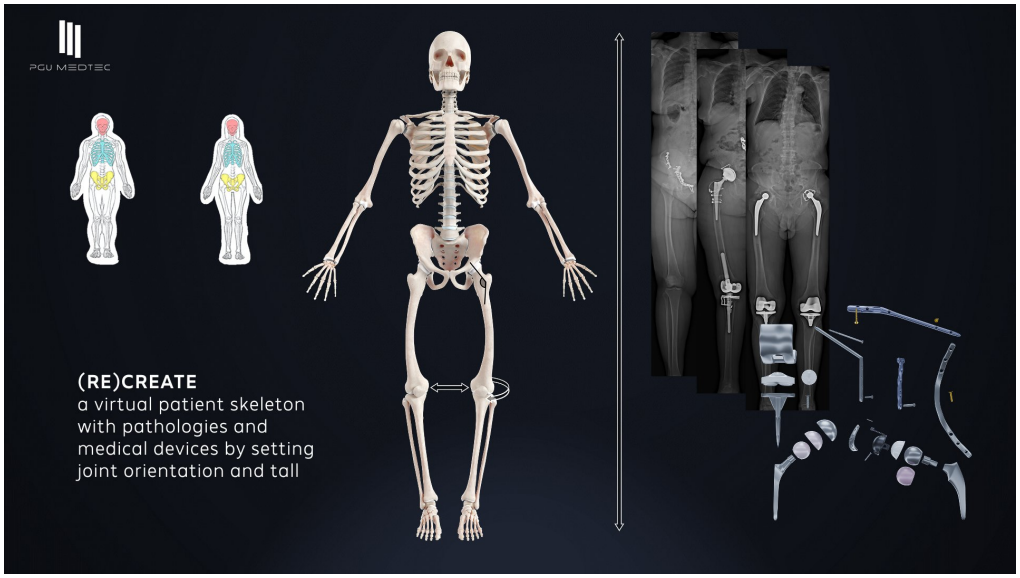
- Simulation-ready assets for education, virtual training, biomechanics research, and medical device development.
- A scalable framework for improving population diversity and representation in digital human models.





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Keywords: Digital Twin, Human Twin, Medical Imaging, Orthopedics, Obesity, Biomechanics, AI, Musculoskeletal Modeling, Personalized Medicine, Virtual Patient, Medical Simulation, Biobank, Computational Medicine.

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Detailed Description

About PGU MEDTEC

PGU MEDTEC is a French MedTech startup specialized in the development of anatomically realistic 3D human digital twins for healthcare applications, including medical education, virtual training, and pre-clinical simulation for orthopedic medical device development and testing.

Our technology enables the transformation of medical imaging data into articulated and simulation-ready human digital twins integrating skeletal structures, muscles, adipose tissues, and external body morphology.

Consortium Objective

We are seeking European consortium partners to establish a large-scale, ethically compliant database of medical imaging and associated clinical data.

The primary objective is to improve anatomical diversity and realism in human digital twins by incorporating data representative of different populations, morphologies, pathologies, ages, sexes, and body compositions.

Particular interest is given to imaging datasets acquired through **EOS imaging, DXA scans, CT scans, MRI and other relevant imaging modalities**, with a focus on:

- Orthopedics
- Musculoskeletal disorders
- Obesity
- Rehabilitation
- Sports medicine
- Metabolic diseases affecting the musculoskeletal system (e.g. obesity, sarcopenia, osteoporosis and diabetes-related complications)
- Body composition and fat distribution
- Anthropometry and morphological diversity
- Aging-related musculoskeletal conditions

This initiative aims to bridge medical imaging, biomechanical modeling, and digital twin technologies to support future healthcare innovation.

Partners We Are Looking For

We welcome collaborations with:

- Hospitals, University Hospitals (CHU), and Hospital Groups (GH)
- Universities and public research organizations
- Medical imaging data holders and biobanks
- Laboratories specialized in biomechanics, biomarkers, computational modeling, and AI
- Additional clinical and educational partners to support future validation and adoption
- Industrial partners interested in digital twin technologies

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What PGU MEDTEC Brings to the Consortium

Using partner datasets, PGU MEDTEC can generate **parametric and articulated 3D population-based digital twins designed to capture anatomical variability across populations**, including:

- Skeletal anatomy
- Muscular anatomy
- Adipose tissue distribution
- External body shape and skin envelope
- Anthropometric characteristics

The resulting models can be standardized and integrated into a continuously growing database aimed at improving the representativeness of digital human twins.

Potential Applications

The generated digital twins can support:

- Medical and healthcare education
- Virtual training environments
- Virtual patient simulation
- AI model training and validation
- Biomechanics research
- Personalized medicine research
- Medical device development
- Pre-clinical virtual testing

Expected Impact

By combining diverse imaging datasets with advanced digital twin technologies, the consortium aims to:

- Improve anatomical diversity in digital human twins
- Increase the realism and accuracy of virtual patient models
- Facilitate the development of AI-based healthcare solutions
- Support predictive biomechanics and patient-specific simulation
- Accelerate innovation in medical education and virtual training
- Enable new approaches for medical device assessment and personalized healthcare

Collaboration Opportunities

PGU MEDTEC is interested in participating in:

- Horizon Europe projects
- EIT Health initiatives
- Eurostars projects
- Digital Europe Programme calls
- Public-private partnerships
- Academic and industrial research collaborations

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