

## Key Facts

### *What's hybrid exoskeleton?*

A combined technology of exoskeleton and functional electrical stimulation - a method for generating muscle movements through electrical stimulation.

### *What's digital twin?*

“Digital twin” in healthcare is a in silico representation of a person that represents information about biomechanical & physiological status, and lifestyle over time.

### *Who benefits from the project results?*

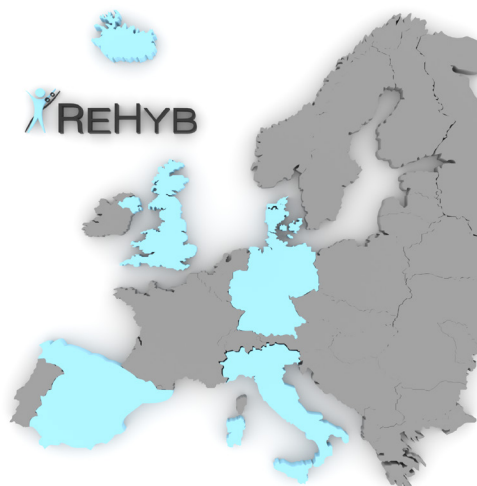
Our main target is movement rehabilitation after stroke, but the technology can be adopted for other forms of movement impairments or general frailty.

### *When did it start?*

The project started 1<sup>st</sup> Jan 2020, and lasts until 31 Dec 2023.

### *How much funding does it receive?*

A sum of 7.2 mil Euro will be used to support R&D activities by the consortium of 11 partners across the Europe.



# REHYB

## Consortium

- Technical University of Munich (TUM), Munich, DE
- IUVO S.R.L. (IUVO), Pisa, IT
- Scuola Superiore di Studi Universitari e di Perfezionamento Sant'Anna (SSSA), Pisa, IT
- Össur hf, (OSS), Reykjavik, ISL
- TECNALIA Research & Innovation (TECN), San Sebastian, SP
- Imperial College London (ICL), London, UK
- Institute for Bioengineering of Catalonia (IBEC), Bcelona, SP
- Technical University of Denmark, Kgs. Lyngby, DK
- Stelar Security Technology Law Research UG (STELAR), Hamburg, DE
- Schön Klinik Bad Aibling SE & CO. KG (SK), Bad Aibling DE
- Congregazione Suore Infermiere dell'Addolorata (VALDUCE), Como, IT



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Rehabilitation based on hybrid exoskeleton  
[www.rehyb.eu](http://www.rehyb.eu)

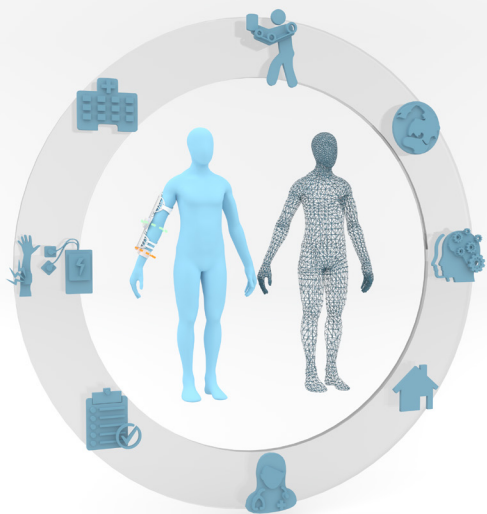
## Background

The ReHyb project develops a hybrid exoskeleton that can communicate, assess, and proactively adapt to users. Using the sensing and actuation technologies of the exoskeleton, we will build the “digital twin” of the user, and use it for personalised assistive robotics in healthcare applications.



## Approach

Over the course of 4 years, the project brings together 11 expert groups in robotics and related technologies to make advances in hardware development, human-robot interaction techniques, human modelling, gaming, patient interaction, and data security.



Robotic systems are able to tirelessly assist intense manual labour, and accurately measure improvements of the patients. Wearable exoskeletons are particularly advantageous, because they can assist during exercises and daily chores, and gather important health-related information over an extended period of time.



“Digital twin” for healthcare is an emerging concept which represents a highly personalised computational model with which the data can be predictively used for reviewing the healthcare models and services.

