innovation for SME

transnational funding opportunities for European SME

Tool for OPtimization of Prosthetics and Orthotics

TOPPO

cornet

EraSME

ASSOCIATIE K.U.LEUVEN

MOBILAB

K.H. Kempen University College

Project Details

Project coordinator	• MOBILAB - K.H. Kempen University College
Sector	• Biomedical and Rehabilitation Technology, Health Care Innovation • Orthopedics en Orthotics
Call of Interest	• ☐ CORNET
Proposal summary:	• **Methods and tools for testing and optimizing orthotics and prosthetics** with a robotic gait simulator and musculoskeletal modelling • **Developing a software tool with workinstructions for orthopedics** - choosing for the best prosthetic alignment for individual needs - platform for best orthotic selection for a specific orthopedic pathology
Advantages for SMEs, trade or industry:	• Direct acces to the workinstruction (software tool) for ortopedics • Possibility to objectively test and optimize new prosthetics and orthotics
Profile of partners sought:	• Orthopedics • Research groups with relevant and complementary expertise. • SMEs with hands-on knowledge in orthopedic or robotic industry. • Orthopedic associations

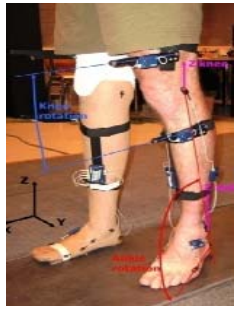
ROBOTIC GAIT SIMULATOR

EXPERTISE

- Simulation of the natural behavior of human unroll of the foot with an articial foot

METHOD

- Determine objective prestation parameters (symmetry, pressure, natural unroll) for different alignments of a prosthetic foot



GAIT ANALYSIS

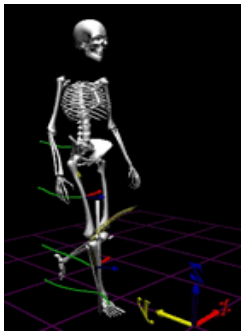
EXPERTISE

•Gait measurements and analysis with 3D motion capturing, force plate, pressure plate, EMG data

- Prosthetic feet alignment with plantar pressure

METHOD

•Determine comfort parameters for different alignments with patients



MUSCULOSKELETAL MODELLING

EXPERTISE

•Simulation of movements with orthotics and prosthetics

METHOD

•Simulation of movement and musle activity with different prostetic foot alignments

EXPECTED RESULTS

•WORK INSTRUCTIONS FOR ORTHOPEDICS: SOFTWARE TOOL

- **Choosing the best prosthetic alignment for individual needs**
- **Choosing for te best orthotic selection for a specific pathology**

•OBJECTIVE METHOD FOR TESTING AND OPTIMIZING NEW ORTHOTICS AND PROSTHETICS

TECHNOLOGY AND APPLICATION FIELD

- Prosthetics and orthotics
- Robotics
- Gait analysis
- Biomedical research

MAJOR OBJECTIVES AND OUTCOMES

- Work instructions for orthopedics: **software tool**

  - case: alignment of lower extremity prosthetics for individual needs

- **Method for testing and optimizing new orthotics and prosthetics**

ACTORS OF THE PROJECT

MOBILAB

www.mobilab-khk.be

BENEFITS FOR NEW PARNTERS (SMES, ASSOCIATIONS)

- Direct acces to the workinstruction (software tool) for prosthetic alignment
- Possibility to objectively test and optimize new prosthetics and orthotics
- Transfer of technology and knowledge to create future commercial products

ESTIMATED COSTS AND DURATION

- 3 year
- 500.000 Euro

MOBILAB
K.H. Kempen University College
Kleinhoefstraat 4
2440 Geel – BELGIUM

www.mobilab-khk.be

Wim.Dewindt@khk.be
Louis.Peeraer@khk.be
Eveline.De.Raeve@khk.be