SoftPro
Project ID: 688857
Funded under:
H2020-EU.2.1.1. - INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Information and Communication Technologies (ICT)

Synergy-based Open-source Foundations and Technologies for Prosthetics and Rehabilitation

From 2016-03-01 to 2020-02-29, ongoing project | SoftPro Website

Project details

<table>
<thead>
<tr>
<th>Total cost:</th>
<th>Topic(s):</th>
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<tbody>
<tr>
<td>EUR 8 675 611,25</td>
<td>ICT-24-2015 - Robotics</td>
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<tr>
<th>EU contribution:</th>
<th>Call for proposal:</th>
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<tr>
<td>EUR 7 440 026,25</td>
<td>H2020-ICT-2015 See other projects for this call</td>
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<tr>
<th>Coordinated in:</th>
<th>Funding scheme:</th>
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<tr>
<td>Italy</td>
<td>RIA - Research and Innovation action</td>
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Objective

Although much has been done for developing technologies to bear upon problems of individuals with sensorimotor impairments, the impact of robotic aids on people with real needs in the real world is still very limited. Our main goal is to increase the cumulative benefits of assistive robotic technologies to society by enhancing their effectiveness AND the number of beneficiaries. The challenge is to increase both multipliers in the “performance times accessibility” product, subverting the traditional situation where one factor can only be increased at the expense of the other. We believe this is possible by investigating how the artificial can physically interact and effectively “talk to” the natural. Understanding such a “language” is crucial not only to improve performance of rehab technology, but also to tackle the most difficult problem of making it “simple enough” to be effective and accessible. We possess good clues about such a language, whose words we believe are sensorimotor synergies, and have the scientific competence to further its understanding and the technological prowess to translate it into a new generation of robotic assistive devices.

We know that a central ingredient for the applicability of synergy-based models to physical human-machine interaction is impedance adaptability, i.e. soft robotics technologies. We will develop soft synergy-based robotics technologies to produce new prostheses, exoskeletons, and assistive devices for upper limb rehabilitation.

Building on solid methodological bases, this project will have a significant social impact in promoting advanced robot prosthetic and assistive technology, while introducing disruptively new, admittedly risky, but potentially high-impact ideas and paradigms, such as the proposed pioneering work on supernumerary limbs for assistance and rehabilitation to motor impairments of the upper limb.

Related information

Report Summaries

Periodic Reporting for period 1 - SoftPro (Synergy-based Open-source Foundations and Technologies for Prosthetics and Rehabilitation)

News

Sharing the workplace with robots? New tool helps designers create safer machines
Coordinator
FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA
VIA MOREGO 30
16163 GENOVA
Italy
EU contribution: EUR 1,772,207.50

Activity type: Higher or Secondary Education Establishments
Contact the organisation

Participants
UNIVERSITEIT TWENTE
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7522 NB ENSCHEDE
Netherlands
EU contribution: EUR 1,092,923.75
Activity type: Higher or Secondary Education Establishments
Contact the organisation

UNIVERSITA DI PISA
LUNGARNO PACINOTTI 43/44
56126 PISA
Italy
EU contribution: EUR 1,026,565
Activity type: Higher or Secondary Education Establishments
Contact the organisation

GOTTFRIED WILHELM LEIBNIZ UNIVERSITAET HANNOVER
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EU contribution: EUR 385,885.22
Activity type: Higher or Secondary Education Establishments
Contact the organisation

EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH
Raemistrasse 101
8092 ZUERICH
Switzerland
EU contribution: EUR 0
Activity type: Higher or Secondary Education Establishments
Contact the organisation
UNIVERSITA DEGLI STUDI DI SIENA
VIA BANCHI DI SOTTO 55
53100 SIENA
Italy

EU contribution: EUR 739 656

Activity type: Higher or Secondary Education Establishments
Contact the organisation

MEDIZINISCHE HOCHSCHULE HANNOVER
Carl-Neuberg-Strasse 1
30625 HANNOVER
Germany

EU contribution: EUR 453 852,50

Activity type: Higher or Secondary Education Establishments
Contact the organisation

TWENTE MEDICAL SYSTEMS INTERNATIONAL B.V.
ZUTPHENSTRAAT 57
7575 EJ OLDENZAAL
Netherlands

EU contribution: EUR 347 156,25

Activity type: Other
Contact the organisation

HANKAMP REHAB BV
BUURSERSTRAAT 198
7544 RG ENSCHEDE
Netherlands

EU contribution: EUR 288 125

Activity type: Other
Contact the organisation

BIOSERVO TECHNOLOGIES AB
TORSHAMNSGATAN 35
164 40 KISTA
Sweden

EU contribution: EUR 313 423,75

Activity type: Other
Contact the organisation
QBROBOTICS SRL  
VIA GIUNTINI 13, LOTTO I,2 PIANO INT M  
56023 NAVACCHIO CASCINA  
Italy  

Act. type: Other  
Contact the organisation

EU contribution: EUR 342,291.50

UNIVERSITAT ZURICH  
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8006 ZURICH  
Switzerland  

Act. type: Higher or Secondary Education Establishments  
Contact the organisation

EU contribution: EUR 0

SCUOLA IMT (ISTITUZIONI, MERCATI, TECNOLOGIE) ALTI STUDI DI LUCCA  
PIAZZA SAN PONZIANO 6  
55100 LUCCA  
Italy  

Act. type: Higher or Secondary Education Establishments  
Contact the organisation

EU contribution: EUR 75,000

TECHNISCHE UNIVERSITAET MUENCHEN  
Arcisstrasse 21  
80333 MUENCHEN  
Germany  

Act. type: Higher or Secondary Education Establishments  
Contact the organisation

EU contribution: EUR 602,939.78

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Retrieved on 2019-07-18

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