Rehabilitative Wayout In Responsive home Environments

Arkusz informacyjny

Informacje na temat projektu

REWIRE

Finansowanie w ramach FP7-ICT

Identyfikator umowy o grant: 287713

Rewire

Status
Projekt zamknięty

Strona projektu

Finansowanie w ramach FP7-ICT

Koordynowany przez
UNIVERSITA DEGLI STUDI DI MILANO

Całkowity budżet € 3 522 717

Wkład UE € 2 730 000

Włochy

Data rozpoczęcia 1 Października 2011

Data zakończenia 31 Grudnia 2014

Opis projektu

Personal Health Systems (PHS)
The REWIRE project develops, integrates and field tests an innovative rehabilitation platform based on virtual reality. The platform allows patients, discharged by the hospital, to continue their intensive rehabilitation at home under remote monitoring by the hospital itself.

The patient sees on the display himself or an avatar moving and interacting in real-time with a virtual game with his movements tracked in real-time. Game variety of scenarios, balanced scoring system, quantitative exercise evaluation, audio-visual feed-back aims to maximize the patient’s motivation. On top of that, a virtual community is setup to educate and motivate the patients.

The patient’s daily activity is monitored by a Body Sensor Networks and his activity is
The patient’s daily activity is monitored by a Body Sensor Networks and his activity is profiled through eigenbehaviors. Environmental, physiological and motion data are combined to tune the rehabilitation exercise level, to assess potential risks and advice clinicians on the therapy.

Data mining in the Networking Station discovers common features and trends of rehabilitation treatment among hospitals and regions.

A pilot is taking place not only to clinically evaluate the effectiveness and suitability of REWIRE, but also to find out which model is the most appropriate to seamlessly connect long-term at home rehabilitation to that at hospital. Appropriate service settings and adequate business models are also being looked at.

REWIRE develops, integrates and field tests an innovative virtual reality based rehabilitation platform, which allows patients, discharged from the hospital, to continue intensive rehabilitation at home under remote monitoring by the hospital itself. The main idea is to assemble off the shelf components in a robust and reliable way to get a platform system that can be to be deployed massively at the patients' homes. The platform is constituted of three hierarchical components: a patient station (PS), deployed installed at home, a hospital station (HS) and a networking station (NS) at a the health provider site. The PS is based on video-based tracking (through a mix of 2D and 3D cameras) and virtual reality. The patient sees on the display himself or an avatar moving and interacting in real-time with a virtual game with his movements tracked in real-time. Game variety of scenarios, balanced scoring system, quantitative exercise evaluation, audio-visual feed-back aims at maximum patient’s motivation. A robust and reliable auto-calibration and spatial synchronization with the graphics is developed. Patient’s daily activity is monitored by a Body Sensor Networks and his activity is profiled through eigenbehaviors. Environmental, physiological and motion data are combined to tune the rehabilitation exercise level, to assess potential risks and advice clinicians on the therapy. The HS main role is the definition and monitoring of the treatment. Data mining in the NS discovers common features and trends of rehabilitation treatment among hospitals and regions. A virtual community is setup to educate and motivate patients. A pilot is designed both for the clinical evaluation of effectiveness and suitability of REWIRE, and the study of the most appropriate model to seamlessly connect long-term at home rehabilitation to that at hospital, appropriate service settings and adequate business models. Using advanced DTI imaging it is tested whether REWIRE meets the rationale of rehabilitation, that it triggers brain adaptations that mediate recovery.

Dziedzina nauki

/medycyna i nauki o zdrowiu/medycyna kliniczna/fizjoterapia
/nauki społeczne/ekonomia i biznes/biznes i zarządzanie/model biznesowy
Program(-y)

Temat(-y)

Zaproszenie do składania wniosków

FP7-ICT-2011-7

System finansowania

CP - Collaborative project (generic)

Koordynator

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Włochy

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**UNIVERSITA DEGLI STUDI DI PADOVA**

*Włochy*

Wkład UE

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