GOOD PRACTICE

ROBO M.D.

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I4W objectives and expected results

Innovation 4 Welfare (I4W) is a Mini-programme cofunded by the ERDF (European Regional Development Fund) through the INTERREG IVC Programme, which helps regions of Europe work together to share their knowledge and experience.

Built over the experience of MATEO project (Interreg IIIC) that was also a Mini-programme aimed at executing sub-projects involving entities to stimulate regional innovation, I4W is a much more focused project.

Start Date: 1st October 2008   End Date: 31st September 2012
TIAM – Toolkits for hazard identification, risk assessment and prevention of work related musculoskeletal disorders based on a collaborative platform

MNEMOSYNE – Teleassistance services for elderly patients with dementia syndrome, alzheimer and their families

FOBOS – Sharing molecular techniques for food-borne pathogen detection

FITREHAB – Fitness and physical rehabilitation at home under expert planning, prescription and contrc with assessment to overcome barriers in the deployment of telemedicine solutions

MRH – Mechatronics based Rehabilitation at Home

ROBO M.D. – Home care robot for monitoring and detection of critical situations

HAS PASSPORT – Benchmarking of regional health and social institutions especially in rural areas

PICKFIBER – Platform for international collaborative knowledge on food improvement, based on ecological resources
VIDEO
Participants

- University of Tartu
- University of South Bohemia
- Fontys University of Applied Sciences
- Johannes Kepler University
- Italian National Research Council

Budget

<table>
<thead>
<tr>
<th>Country</th>
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<tbody>
<tr>
<td>AT</td>
<td>€135,000</td>
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<tr>
<td>IT</td>
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<td>CZ</td>
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<td>EE</td>
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Total Budget: €445,996

From 1 February 2010 to 30 October 2011
General implementation plan:

**Johannes Kepler University Linz** (Lead Partner) was responsible for project coordination and led sensor setup, test cases and intervention strategies.

**Italian National Research council** provided the mathematical models necessary to describe the examined part of the human metabolism.

**University of South Bohemia in Ceske Budejovice** established a wireless communication of the various sensors connected to the patient.

**Fontys University of Applied Sciences** was responsible for mechatronics of the robot.

**The BIIT (Bioinformatics, Algorithmics and Data Mining) group of the University in Tartu** was responsible for evaluation of the data obtained.
ROBO M.D. - Home care robot for monitoring and detection of critical situations
A home-care robot for monitoring and detection of critical situations was developed to improve quality of life of risk patients like elderly people, and also to reduce costs of home-care systems.

In a critical situation (for instance fall of user) the robot will find a way to the user and will start a simple conversation. By a few questions the robot will find out if an emergency case happened or if it was false alarm.

To communicate with the user or to find the way to the patient, the robot is equipped with different type of sensors. For instance video camera, speakers and microphone. During daily life the sensors could be turned off, which gives the user the feeling not to be observed, so it can increase the user’s acceptance of the robot.
System architecture

Medical service, nurse, guardian, ...

Software → data processing → decision

www.innovage-project.eu
Signals and detection

Software running on a PC

Data processing

Decision / Alert
ROBO M.D. proved that:

- Innovation can be improved by using interregional cooperation and multistakeholder approach. Good Practice means interregional cooperation on a specific research project in the form of mini-program.
- The project consortium from 5 European regions develops a personal health and home care intelligent assistance tool for elderly. The wireless homecare robot can be used in many telemedicine pilots in Europe.
- ROBO M.D. participated in **Werner von Siemens Excellence Award in Czech Republic**.
Thank you for your attention

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