age@home
ICT-solutions for self-determined aging in familiar environments

JOANNEUM RESEARCH

DIGITAL – Institute for Information and Communication Technologies
Kurt Majcen, Klaus Dobbler, Maria Fellner, Harald Mayer, Roland Mörzinger, Thomas Orgel, Bernhard Rettenbacher, Susanne Rexeis, Alexander Stocker, Georg Thallinger

Health – Institute for Biomedicine and Health Sciences
Peter Beck, Bernadette Pierer, Stephan Spat

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Content

• DIGITAL
• project age@home
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DIGITAL
Institute for Information and Communication Technologies

- 5 research groups
- approx. 125 staff
- Graz

Remote Sensing and Geoinformation
Machine Vision Applications
Space and Acoustics
Audiovisual Media
Intelligent Information Systems
age@home

• internal AAL initiative at JOANNEUM RESEARCH
  • cross-cutting issue
• make use of synergies from different areas of expertise
  • research groups from 2 institutes
    • Space and Acoustics
    • Audiovisual Media
    • Intelligent Information Systems
    • eHealth and Health Science

• Funded by the Austrian Ministry for Transport, Innovation and Technology within the funding agreement 2011-2012
Example Sabine

- 80 years old
- living alone in her little fine apartment
- mobile care assistant visiting her three times a week
- mental fitness
  - reading newspapers and books
- motoric problems
  - moving around not easy
  - some days danger of falling down (when she is alone)
- Diabetes Mellitus Type 2
  - subscribed to disease management programme
    - goals regarding nutrition and body activities defined once a year
    - healthy target ranges (blood pressure and blood sugar)
    - take right drugs at foreseen daytimes
    - eating and drinking according to a diet plan
    - perform sufficient fitness exercises each day
  - physical parameters mostly under control but episodes of instability
    - more intensive contact with her doctor
- social situation
  - due to insufficient mobility danger of losing social contacts and feeling lonely
  - many of her friends died
  - family cannot visit her as often as she would like this
Assistance 1

Acoustic gait analysis

- detection
  - identification
  - mobility and the risk of falling down
  - acute situations of danger
- respecting privacy
- low installation costs
Assistance 2

KINECT4AAL

- intelligent sensor for assisting elderly people in their homes for activities of daily living
- cheap and compact
- respecting privacy
  - *microphone array, depth camera, RGB-camera*

<table>
<thead>
<tr>
<th>Number of people</th>
<th>1</th>
</tr>
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</table>
| Activity 24h     | 57%
| Move 24%         | |
| Stand 76%        | |
| Passivity 24h    | 43%
| Sit 10%          | |
| Sleep/lie 90%    | |
| Communication    | |
| Cooking, drinking, eating | |
| Activity threshold | |
| Fall             | |

age@home: ICT-solutions for self-determined aging in familiar environments
Future communication on mobile devices

- communication platform
  - status messages and multimedia
  - contacts for calls and chats
  - integration of external platforms

- smart diabetes diary
  - monitoring parameter
  - information relevant for therapy
  - integration with existing infrastructures
Future communication on mobile devices - AALI
Results

• prototypes for the 3 use cases
• partially in experimental stage
• partially evaluated in usability tests
• presentation in stakeholder workshops
• combining results with the means of an activity stream
Thank you for your attention

Please visit us in the exhibition (1.B.06)

Maria Fellner
(Project coordinator and Application manager AAL)
maria.fellner@joanneum.at

Kurt Majcen
kurt.majcen@joanneum.at

JOANNEUM RESEARCH
Forschungsgesellschaft mbH
Institute for Information and Communication Technologies
www.joanneum.at/digital