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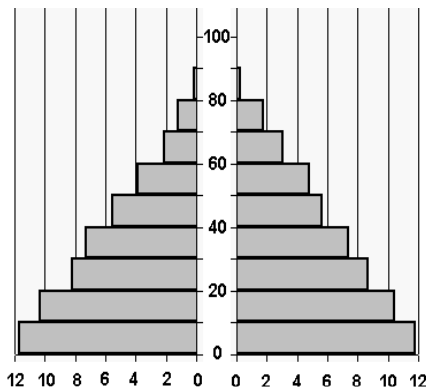
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Cooperation between AAL related research and care giving for seniors in the municipality of Schwechat

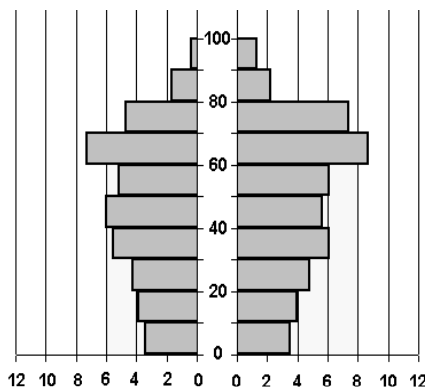*W.Hlauschek[1], H.Meissl[2], U. Barta[2], K.Werner[1], P. Panek[1] [3]*

1) …CEIT RALTEC, Schwechat, AUSTRIA
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3) …Vienna Technical University, AUSTRIA

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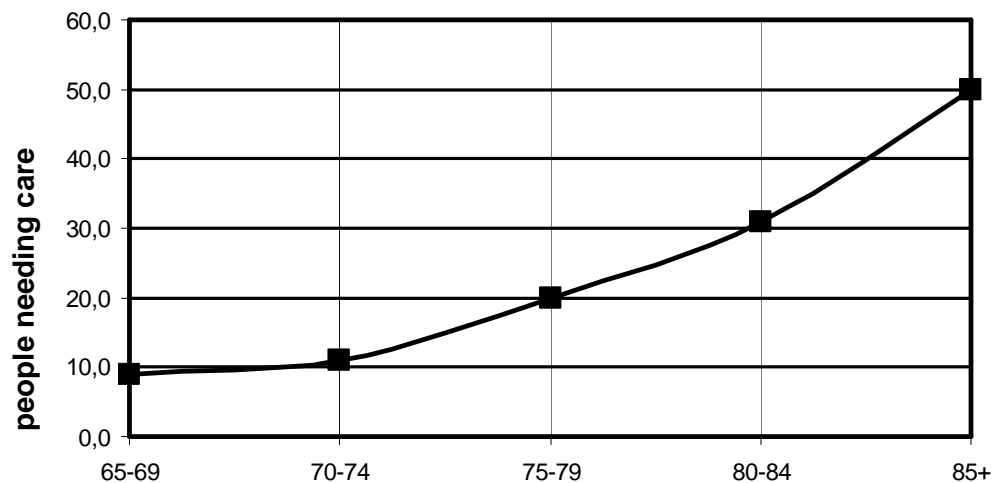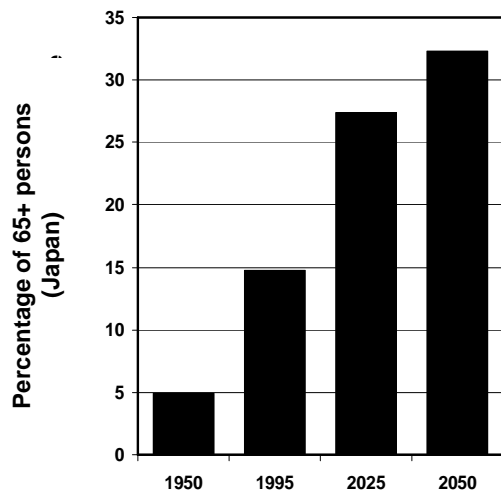
Demographic change in the developed countries

Germany 1910

Germany 2030

40 years forecast (Europe):
- 65+ population will treble
- 80+ population will quadruple

➔**huge challenge to society**

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… an answer gives AAL

- AAL = Ambient Assisted Living
  +/- supporting environment for living, esp.
     for older people

- ICT and other technologies (e.g. intelligent materials), in order to prolong the independent living of older (but also of disabled) persons as long as possible

- Examples of what is part of it:
  - Assistive smart homes … independant and safe living
  - Barrier free design
  - Senior specific ICT user interfaces … inclusion
  - eCare/teleCare solutions
  - Support for mobility

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situation in SCHWECHAT

Interviews with seniors - Schwechat 2007 (H.Meissl):

- \> 90 % want to stay at own home at an old age
  - Believing, that dwelling situation is suitable
  - Facing problems outside their home (e.g. stairs)
- Large group of elderly gets support by relatives (household, shopping)
- 73 % have daily contact to relatives
- Concerns of single living seniors:
  - Fall downs followed by helplessness
  - Danger of fire (oven etc.)
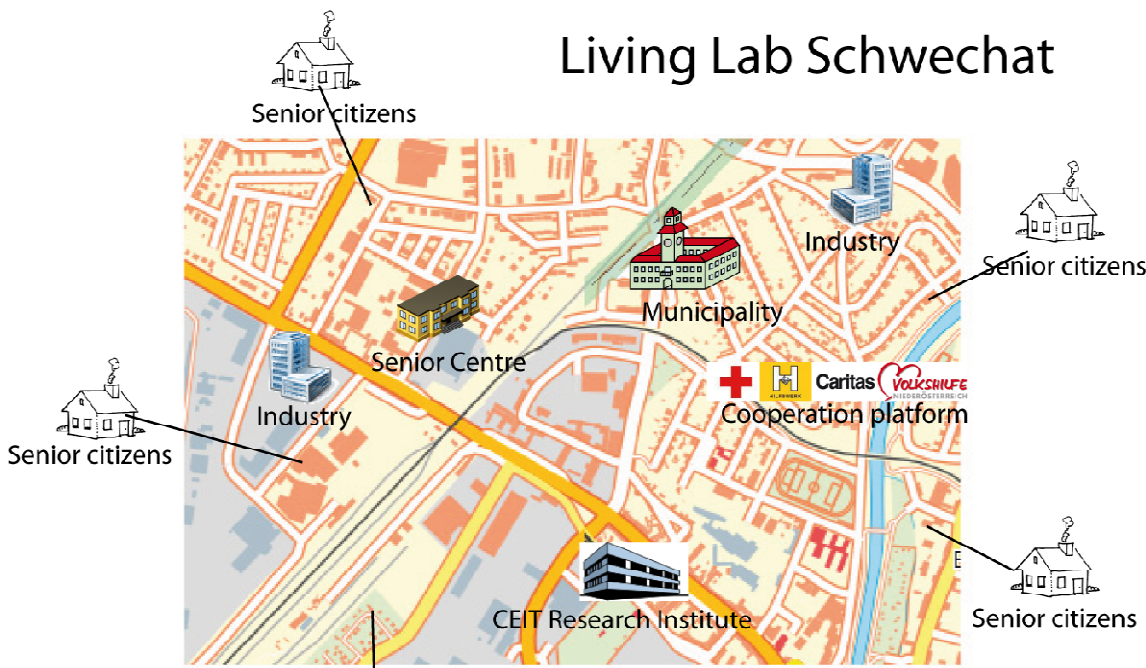 - Social isolation (building conditions, missing infrastructure)

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AAL Living Lab Schwechat

Living Lab Schwechat

- CEIT research institutes

- Municipality of Schwechat

- Senior citizen centre Schwechat

- Advisory board of senior citizens

- Cooperation platform of
  social services

- SME and industry

- *senior citizens*

outcome of eSchwechat.at programme

SCHWECHAT

Background & Motivation

- **intensive and early involvement of users**
  - in the innovation and design process is crucial to ensure
  - that the future product will meet the actual needs of the users in their daily life.

- **who are the users?**
  - Seniors as primary end users
  - Care-givers, nurses etc. as secondary end-users

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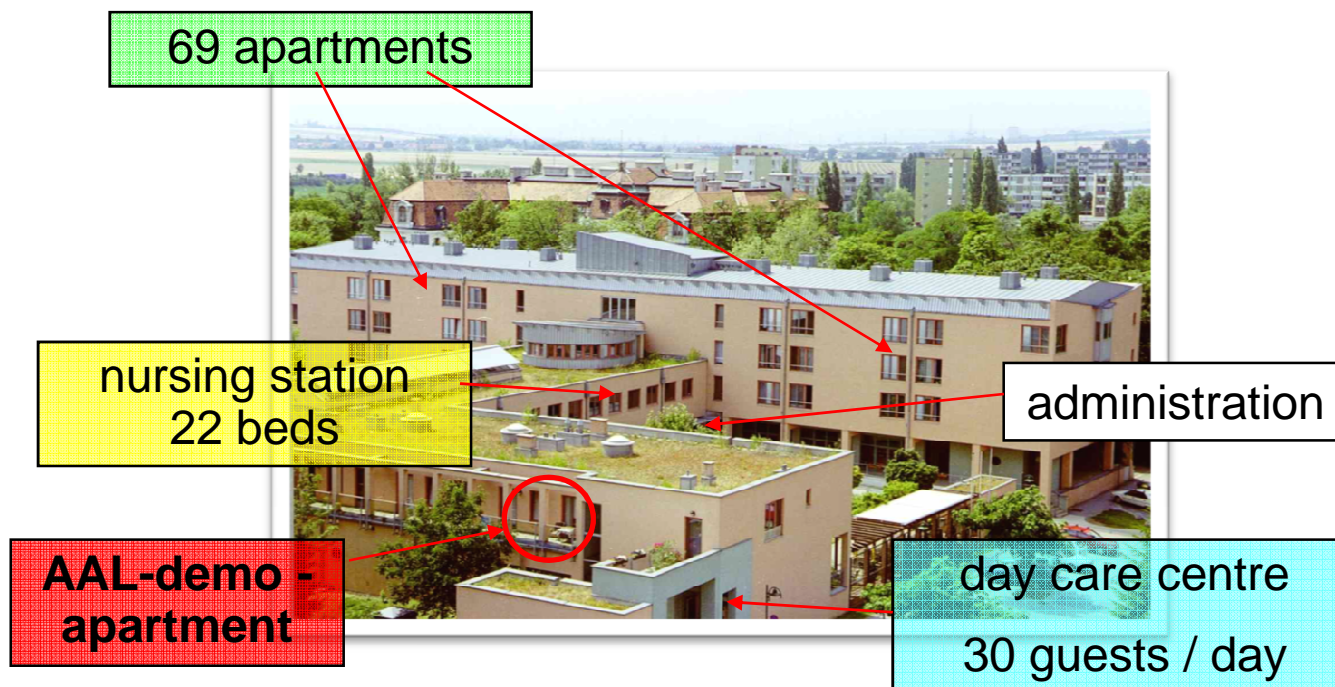CENTRAL EUROPEAN
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- **CEIT RALTEC** was founded in 2006 by the municipality of Schwechat as a non profit extra faculty R&D institute

- R&D of innovative ICT in the area of
  - **Ambient Assisted Living (AAL)**
  - eHealthcare
  - eHomecare
  - Barrier free usability of ICT interfaces
- for **older persons** and people with special needs
- enabling and empowering people to **live independently and autonomously** in their own home as long as possible
- close cooperation with Vienna University of Technology

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LL- Schwechat - actors

SCHWECHAT

69 apartments

nursing station
22 beds

administration

AAL-demo -
apartment

day care centre

30 guests / day

„Seniorenzentrum" Schwechat

(since1996)

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LL- Schwechat - actors

SCHWECHAT

S e n i o r Citizen C E N T E R

CARE
COMPANIONSHIP
ADVICE

OFFERS

NETWORKING

RESIDENTS
DAY CARE C.'s
GUESTS
RELATIVES

MUNICIPALITY's
ACTIVITIES FOR
SENIORS

EVENTS

FITNESS COURSES

BARBER &
FOOTCARE

Demo-APPARTM.

CARE
Organisations

CEIT Raltec –
RTD

SENIORs' ADV.
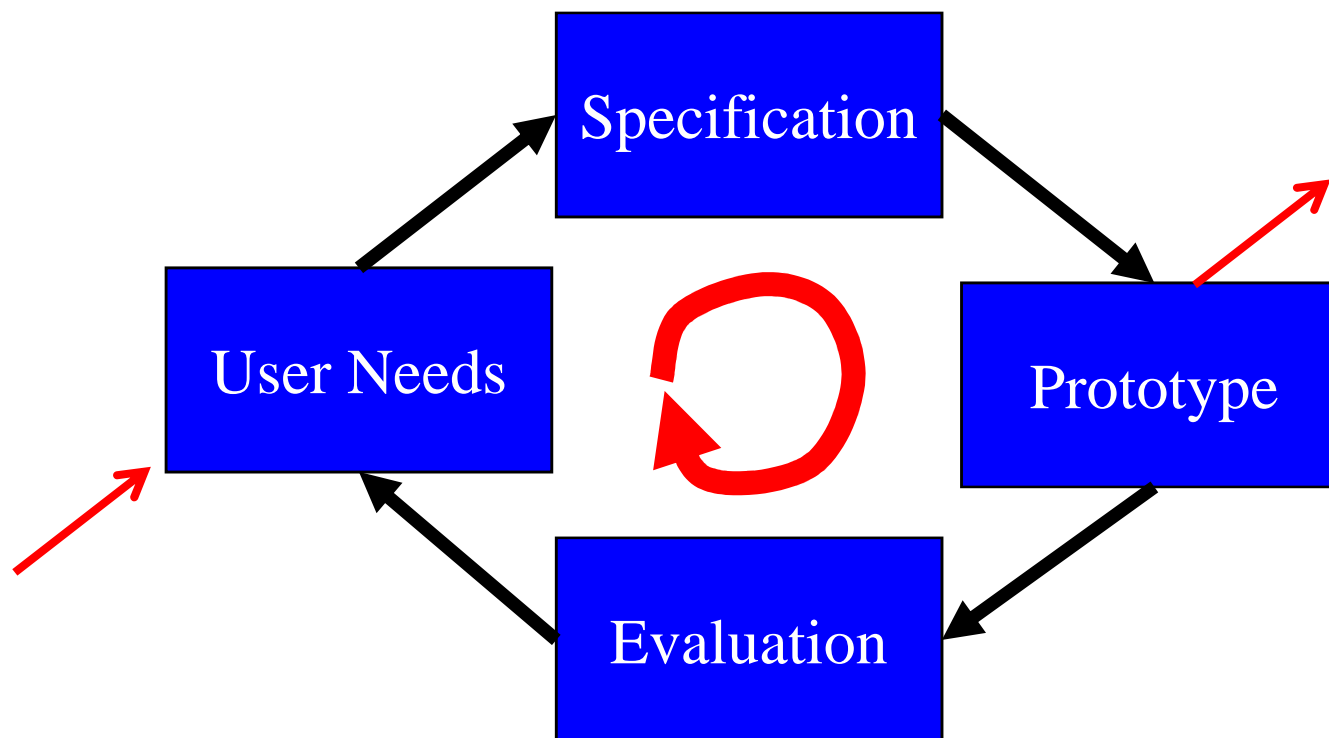BOARD

Methodology

- **User centered design**
  - Focus groups
  - Interviews
  - Workshops with primary and secondary end users

  - Use of „mock ups" (prototyping devices)
  - Different types of evaluation methods
    - In usability lab and
    - Real user environment

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Methodology (2)

– Iterative approach:

Project examples

Interactive Picture Frame

- intuitive voice and video communication platform for senior citizens

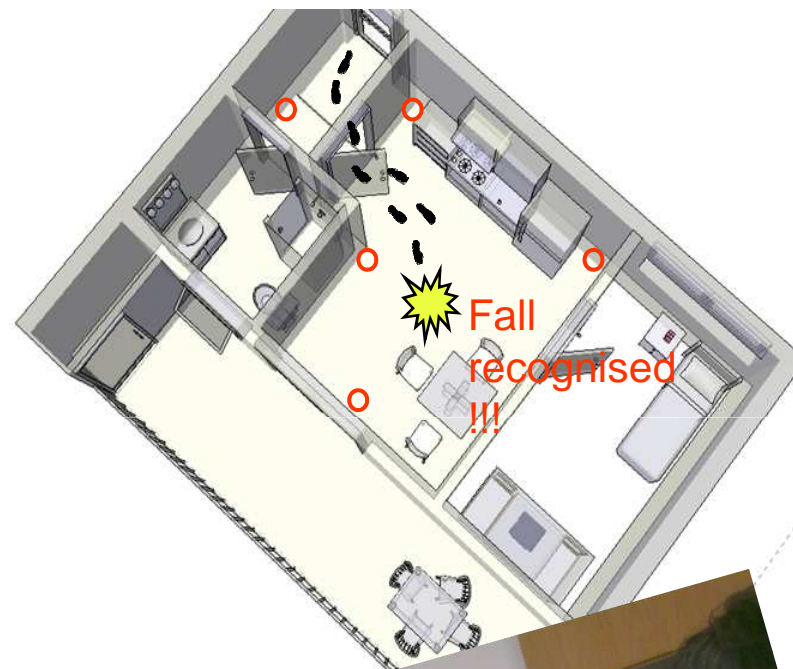- based on

  touchscreen-PC

- in cooperation with

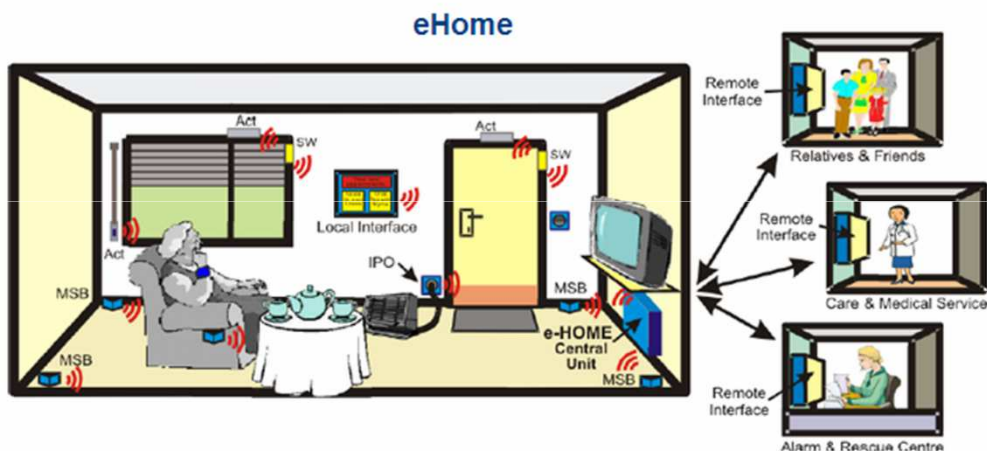# Project examples

EHome

- targets:
  - Improving personal safety and quality of life in senior's own home
  - recognition of critical situations
  - recognition of falls
  - monitoring safety-critical areas (e.g. cooker)
  - automatic alarm generation for getting external help
  - → enabling elderly people to stay in the home as long as possible

- in cooperation with
  - Vienna University of Technology
  - TREVENTUS MECHATRONIK GmbH
  - Kapsch CarrierCom AG
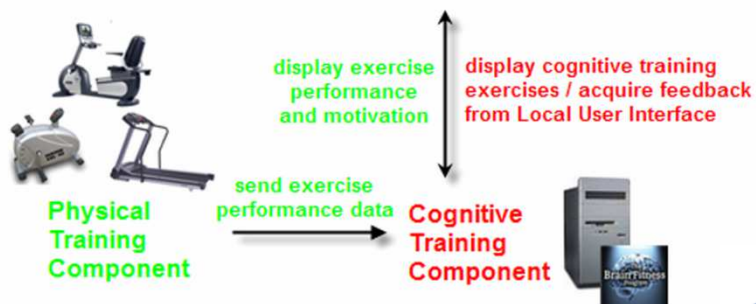- supported by

FFG

Fall recognised !!!

Project examples

Long Lasting Memories

- ICT-based cognitive and physical training in a safe environment

- field trials in the Living Lab Schwechat and 4 other EU-countries

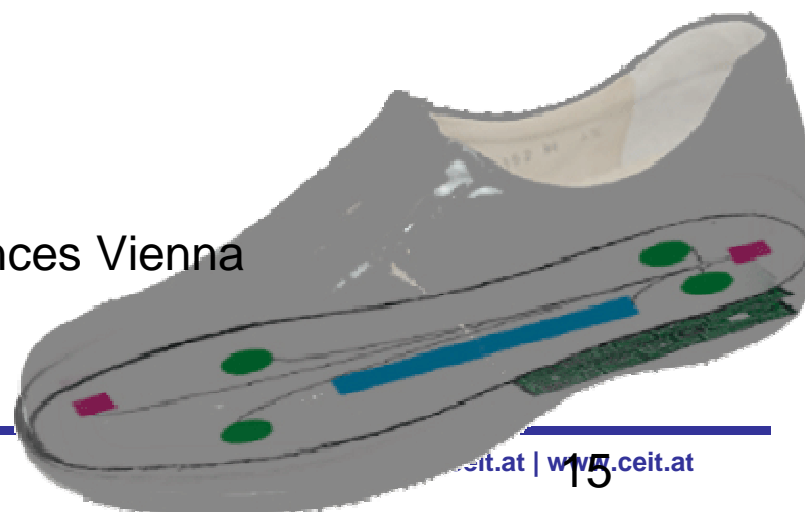- in cooperation with 11 partners in 6 European countries

Project examples

VITALIShoe – instrumented eShoe

- Prediction of falls
  - Long term
  - Short term
- Analysis of gait
  - Recognising causes of falls
  - Distinctive features with regard to old persons
- Notifying of a fall (if nothing else possible)
- Rehabilitation
- Therapy
- Sports
- in cooperation with
  - Technical University of Applied Sciences Vienna
  - Massive Art GmbH
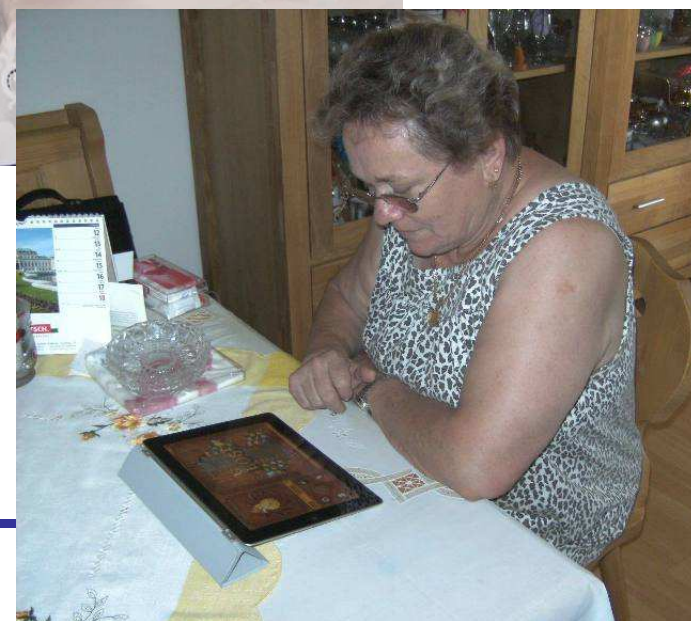- supported by

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Project examples

myTablet

- Study concerning usability and acceptance of tablet PCs by seniors

- Usability study including fieldtests with older people (internet and computer newbies) in Schwechat (2011)

Project examples

KSERA

- Validation of social assistive robots (SAR) in LL Schwechat

http://ksera.ieis.tue.nl/

- ## Establishing
  - of a heterogeneous group of potential end users
  - of a network between stakeholders
    - senior centre
    - seniors advisory commitee
    - mobile care providers
    - municipality
    - CEIT
  - Academic and practical contacts to other similar activities across Europe
- ## Several successfully completed projects

Results (2)

- ## AAL demo-appartment in the seniors' centre
  - Objectives
    - show room for end users
    - demonstrations of R&D outcomes
    - testing
    - teaching
  - Project team:
    - Seniors' centre
    - municipality
    - CEIT RALTEC
    - mobile care providers
    - enterprises

SCHWECHAT

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Lessons learned

- Speaking the same language

- Persons of trust

- Recruiting of users

- Top down / bottom up

- Time and effort needed

- Sometimes not possible to involve dedicated target group

- Awareness regarding „living lab"

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Conclusion and outlook

- Concrete pragmatic approach of cooperation is a good choice

- Inerdisciplinary work
  - Framework for user centered development & evaluation of novel technical solutions for support of elderly and their carers in their daily life

Acknowledgements

The Living Lab Schwechat is an activity launched within the eSchwechat.at initiative which was run by the municipality of Schwechat from 2005-2009. The research institutes CEIT Alanova and CEIT Raltec are owned by the municipality of Schwechat and are carrying out RTD projects funded by various sources, in particular EU, FFG and private companies.

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Our **special thanks goes to all the volunteers** participating in the LL activities, the team of the Senior Center and the representatives from mobile care organisations for their valuable contributions and support

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Q&A ?

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