



AGNES

User-sensitive Home-based Systems
for Successful Ageing in a Networked Society



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Objective: **Successful Ageing with Innovative ICT**

- **Target users**
 - Elderly people, living alone, often with mild cognitive impairment, their family and other caring persons
- **Reduce isolation and loneliness**
 - Increased social interaction
 - Sensitive emotional support
 - More participation in shared activities
 - Practical support for daily needs
 - Enhanced feelings of security
- **Extend independent living in own home**
 - Alleviate, delay, even reverse psychological decline
- **Explore the new frontier of ageing research**
 - ICT and its possibilities for/effects on cognitive wellbeing in the elderly





Summary of Effort

- Ten partners in 6 countries
 - 3 user organisations (in Sweden, Greece, Spain)
 - 3 companies (in Germany, Austria, Italy)
 - 4 universities/research centres (in Sweden, Spain, Greece, Austria)
- 400+ person months over 36 months
 - total cost: €3,6 million
 - AAL funding: €2,4 million



AGNES partners

- Umeå University, Sweden
- UNED, Spain
- Can Controls, Germany
- Graz University of Technology, Austria
- AIT, Greece
- Modern Families, Austria
- KMOP, Greece
- ONDA Communication, Italy
- INGEMA, Spain
- Skellefteå Municipality, Sweden



- AIT, Greece
- Modern Families, Austria
- KMOP, Greece



- ONDA Communication, Italy
- INGEMA, Spain





The AGNES Vision

- **Wellness and active social participation go together**
 - Technology can increase social participation
 - Combating loneliness and mental deterioration
- A secure social network system for the older person

- **Elderly people retain implicit cognitive knowledge**
 - Interaction with technology should capitalise on this
 - Most current systems and devices rely on explicit knowledge for use
- Design/develop tangible interaction around the retained skills of older users

- **Family members need to be informed about elders' states and needs**
 - Can then respond in a timely and sensitive way
 - Contact/visit/involve as needed, not intrude
- Unobtrusive detection/communication of activities and states

- **All this demands user-led innovation for success**



AGNES User-led innovation

- **We don't know in advance what will work for older people & their families**
- **An evolutionary approach to design and implementation**
- **Users actively involved in design and testing from the beginning**
 - Requirements, scenarios, suggestions, reactions
 - Iterative design prototypes - system and components
 - Allow older users to communicate requirements, preferences
 - Discussion objects, test use, selection, field trials
- **Creative tension with technical work**
 - Technologists want early specifications
 - User-led innovation **means** keeping design options open

Waterworth, E. L. & Waterworth J. A. (2009). Designing ICT for the over 80s. In Topo, P. & Östlund, B. (2009), *Dementia, Design and Technology: Time to Get Involved*. Amsterdam: IOS Press

Waterworth, E L & Waterworth, J A (2006). The ELITE approach to designing IT for elderly. *Gerontechnology*, 5(2), 2006.



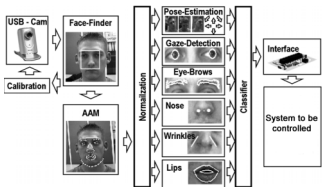
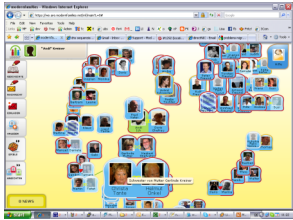
Work plan

- **Incremental and modular design and implementation**
 - Involving users at every step in design and evaluation in use
 - Approach and components
 - Including field trials of 3 stages of prototype
- **Starts with a dedicated family social network**
 - Built around the old person and family
 - Can include non-active networkers (e.g. pets, babies)
- **Progressively add, test (and remove!) features:**
 - Detection of users' states and activities without intrusive sensors
 - Ambient devices for display and interaction
 - Tangible interaction objects for participation
- **Provide a platform for future modular applications**
 - Develop test applications (e.g. Games) that use platform
- **Investigate psychological and social impact**

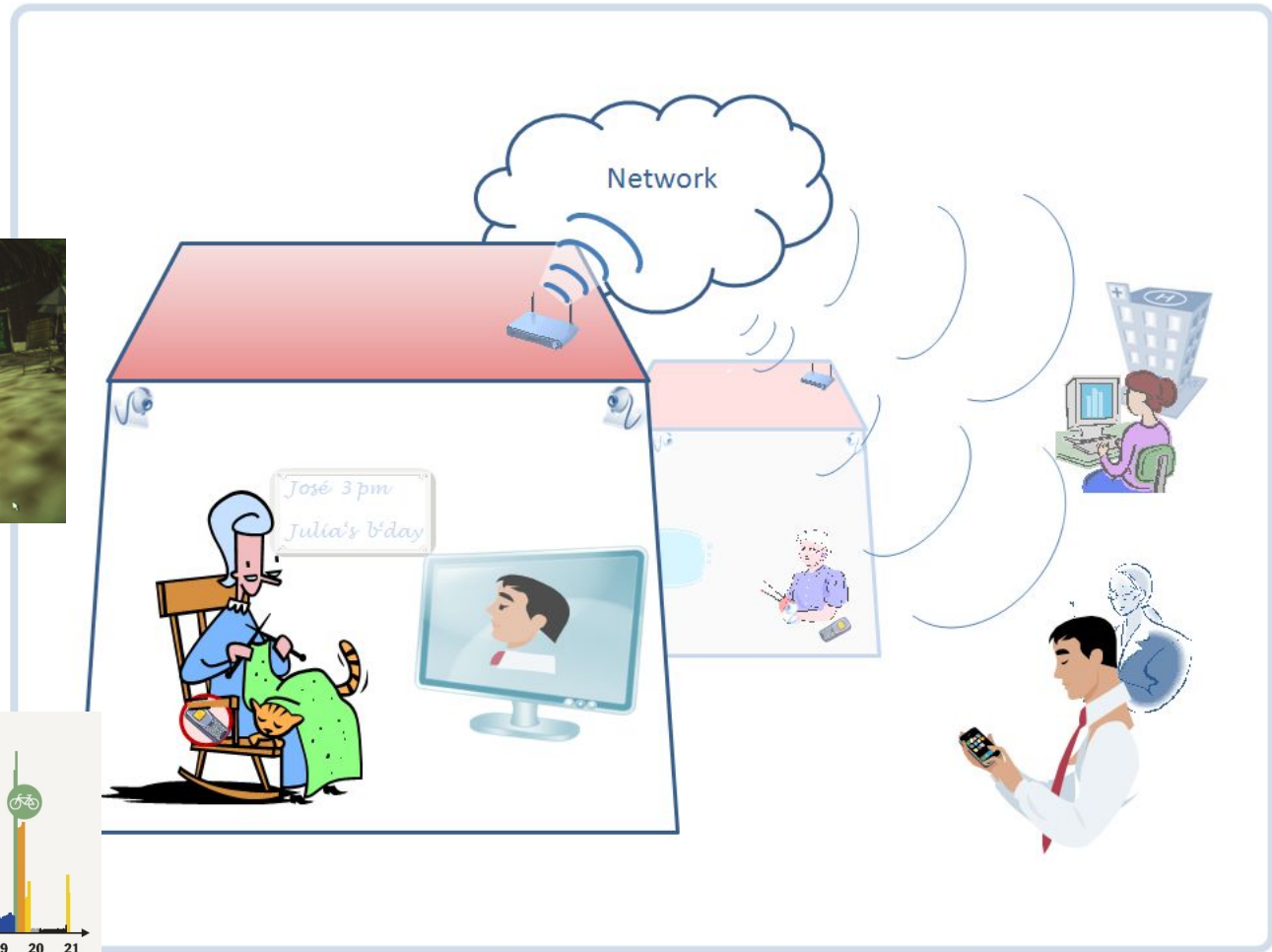
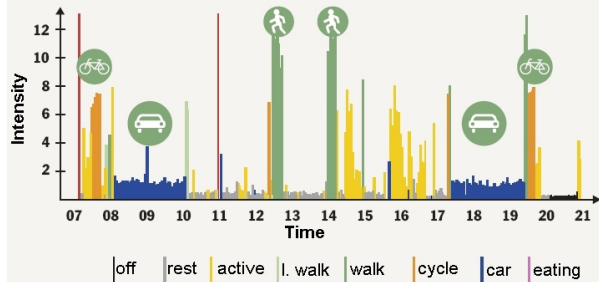


AGNES:

home-based, user-sensitive, for social inclusion/caring



Activity Diagram





Evaluating impact on users and their families

- **Investigating the psychological and social impact**
 - Before, during and after, with and without AGNES, across 3 cultures
 - Users, family and other caring persons
- **Select end users, calibrate wellness status at the start of trials**
 - E.g. WHO International Classification of Functioning, Disability and Health
 - indicator of changes in general health and cognitive functioning over time
- **Tests of specific cognitive abilities and mood states, e.g.**
 - Mini Mental State Examination tests five areas of cognitive function: orientation, registration, attention and calculation, recall, and language.
 - Versions are available for all relevant languages.
 - Self-Assessment-Manikins (SAM), devised by Lang (1980),
 - extensively tested in conjunction with the International Affective Picture System (CSEA, 1999)
 - graphical version can be used across different language speakers
- **Interviews, both structured and unstructured,**
 - with elderly users, family and other caring persons
 - including social and practical aspects



Commercialisation aspects

- **ONDA Communication, ModernFamilies, CanControls**
 - Plus user organisations and other partners
- **During AGNES, we will:**
 - Develop a commercial dissemination plan
 - Conduct specific assessment of market values
 - Aim towards cheap technology for mass deployment
 - Develop a specific product roadmap
- **Market opportunities include:**
 - Stimulation of bandwidth requirements
 - Devices for state/activity detection, ambient/tangible interaction
 - Services, especially in social contexts
- **Telecoms, equipment, device and service suppliers**



AGNES Workpackages

chronological from left to right

