

# Social Innovation and the importance of user engagement

FLARE

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Ass. Prof. Torbjörn Svensson  
CASE, Lund University, Sweden

*innovAge*  
SOCIAL INNOVATIONS PROMOTING ACTIVE

Centre for Ageing and Supportive Environments, Lund University

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FP7-HEALTH-2012-INNOVATION-1/No 306058

**INNOVAGE Coordination Team**

**The University of Sheffield**  
**Department of Sociological Studies**  
**Northumberland Road**  
**Sheffield, S10 2TU, UK**  
**T: +44 (0)114 222 6458**  
**F: +44 (0)114 276 8125**  
**E: [innovage@sheffield.ac.uk](mailto:innovage@sheffield.ac.uk)**  
**[www.innovage.group.shef.ac.uk](http://www.innovage.group.shef.ac.uk)**

# *innov*Age

**SOCIAL INNOVATIONS PROMOTING ACTIVE  
AND HEALTHY AGEING**



**Funded by the European Commission's Seventh Framework Programme  
FP7-HEALTH-2012-INNOVATION-1/No 306058**



# WP2: User-driven Housing for Older People

Centre for Ageing and Supportive Environments (CASE),  
Lund University, Sweden (ULUND)

WP leader: Susanne Iwarsson, PhD, Professor

ULUND Team:

- Torbjörn Svensson, PhD, Assoc. Prof.
- Maria Haak, PhD, Assoc. Prof.
- Oskar Jonsson, PhD
- Knut Mårtensson, MSc
- Steven Schmidt, PhD
- Björn Slaug, PhD



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# More Partners Involved

- Heidelberg University, in collaboration with Goethe University, Frankfurt, Germany,
- I.N.R.C.A, Ancona, Italy
- Riga Stradins University, Latvia

# Rationale

- As the proportion of older people in the population is increasing, more will be living more years of their lives with functional limitations
- The importance of accessible housing that enables people with functional limitations to live independently is increasing – they spend much of their time at home and many activities take place there
- Senior citizens are now placing greater demands on their active involvement in decision-making regarding housing options

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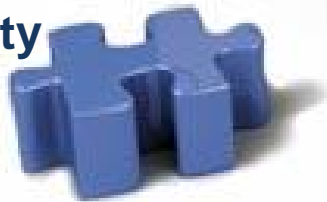
# The Complexity of Housing...



# ICT Tool Focusing on One Aspect...



**Accessibility  
(P-E fit)...**



**...as one prerequisite for housing  
supporting active and healthy  
ageing**

# Housing Enabler instrument

Administered in 3 steps

**1** Profile of functional limitations

**2** Physical environmental barriers



## Functional limitations (FL)

- Interview and observation
- Present / not present
- 12 items (FL) and 2 items dependence on mobility devices

## Environmental barriers (EB)

- Objectively assessed based on national standards for housing design
- Present / not present
- 161 items (60 in screening version) (indoors/ entrances/ exterior)

Accessibility problem score: A function of the individual profiles of functional limitations and the presence of environmental barriers



# Cross-national requirements

- Users, stakeholders and researchers in Sweden, Germany, Italy and Latvia met in group discussions ie Research circles.
- Research circles were conducted in order to:
  - generate knowledge on how senior citizens in different European countries express their needs and expectations regarding housing options.
  - establish user requirements for an ICT Tool prototype.

# Research Circles

- Representing senior citizens and stakeholders in different parts of Europe
- Collaboration on equal terms
- Four sessions per circle
- Cross-national workshops and web meetings with the research teams



# Research Circles continued

- Research circles were conducted in order to:
  - generate knowledge on how senior citizens in different European countries express their needs and expectations regarding housing options.
  - establish user requirements for an ICT Tool prototype.



# What is a Research Circle?

- The research circle methodology has its point of origin in the Swedish tradition of study circles
- It has been further developed by researchers at Lund University, Sweden to be a practice-oriented and structured research approach
- The theoretical foundation developed by Ferrière, Ferrer and Freinet goes back to the early twentieth century

# What is a Research Circle? Continued

- The term research circle sessions refers to the series of meetings that occurs in the context of the research process
- Research circles include a selected number of people with different backgrounds who come together several times for a predefined period of time in workshop sessions to discuss a common topic

# What is a Research Circle? Continued

- Used as a means to engage participants representing the users, stakeholders and researchers in a joint effort to discuss scientific knowledge in relation to reality
- To develop or collect knowledge that has not previously been identified

# What is a Research Circle? Continued

- The research circle methodology differs from the related focus group methodology in adopting an explicit participatory design focus where researchers and participants contribute with equal authority
- Focus groups are based on a group interview methodology, research circles represent a way to collaborate with users in the generation of knowledge

# What is a Research Circle? Continued

- The research circle sessions provided a place for reflection in which the participants could describe and analyze problems and pose questions about housing provision, the built environment, environmental barriers generating accessibility problems, and the possible benefits of an ICT tool for the identification of optimal housing options.



# What is a Research Circle? References

- Härnsten, G. The Research Circle: Building Knowledge on Equal Terms; Swedish Trade Union Confederation: Stockholm, Sweden, 1994.  
[\[Google Scholar\]](#)
- Ståhl, A.; Carlsson, G.; Hovbrandt, P.; Iwarsson, S. “Let’s go for a walk!”: Identification and prioritisation of accessibility and safety measures involving elderly people in a residential area. Eur. J. Ageing 2008, 5, 265–273.  
[\[Google Scholar\]](#) [\[CrossRef\]](#)

# Requirements Discussed

- What should the ICT tool be able to do?
- Which characteristics?
- What could make the ICT tool user friendly and attractive to use?
- In what ways should it be possible to interact with the ICT tool ?
- What kind of information should the ICT tool provide?
- In what way should the information be provided?

# Cross-national Core Requirements

- Detect, evaluate and provide information on potential accessibility problems in current or available dwellings
- Suggest or recommend possible actions to address identified accessibility problems
- Preferably contain additional information, e.g. on public transportation, facilities in neighborhood
- Have an interface easy to understand and use, simple in design
- Possible to use also for people with disabilities

# Some nation specific requirements

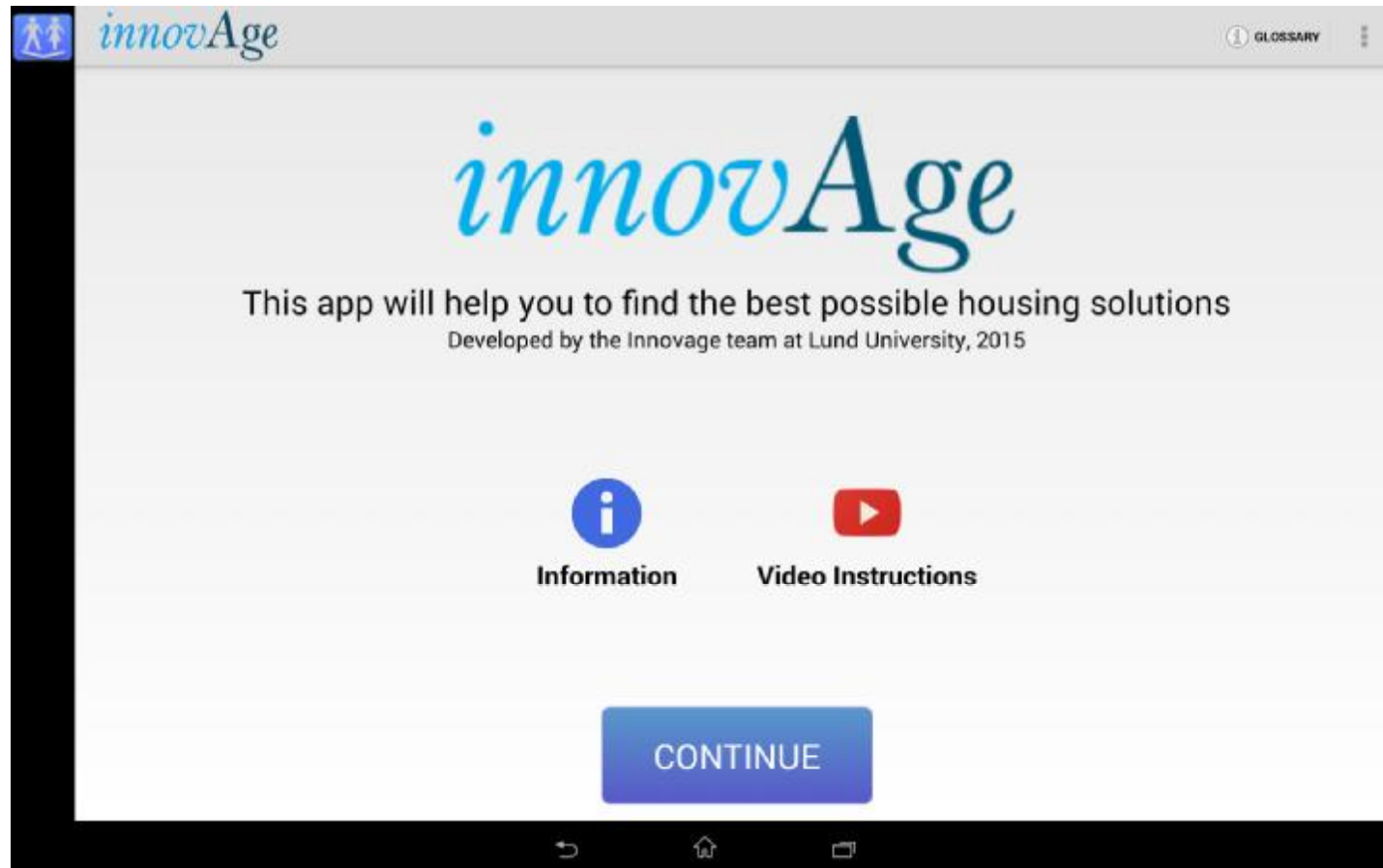
- Emphasis of extra costs associated with having to re-establish an adapted apartment when moving out (Germany)
- Accessibility problems associated with many apartments built under Soviet period, based on standards of that time (Latvia)
- The ICT tool should address both the housing and the urban neighborhood environment (Italy)
- The ICT tool should be personal and capable of monitoring the user's functional profile (Germany)
- The ICT tool should provide information about distances to public transport, health care, shopping, etc. (Sweden)
- Vision of a community of users sharing information through an internet portal available for all (Italy, Latvia)

# The prototype

- A team of students were engaged to set up the basic structure for the ICT tool and completed their work in January 2014 - Demola
- Research engineer Knut Mårtensson is employed by ULUND for the development of the ICT tool
- A first version of the ICT tool is tested for usability by user panels in Sweden and Latvia



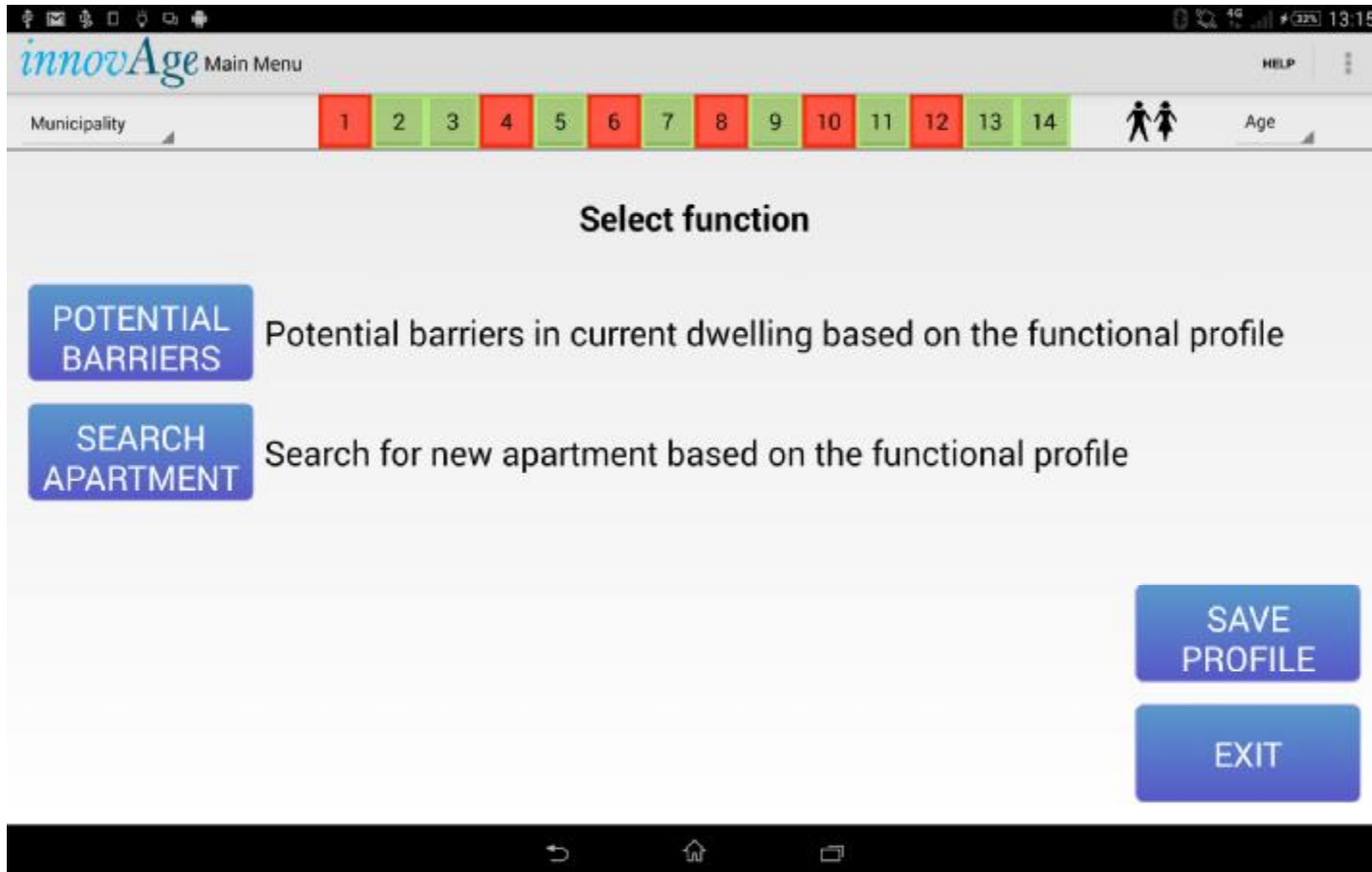
# Android App Prototype



# Individual Functional Profile Definition

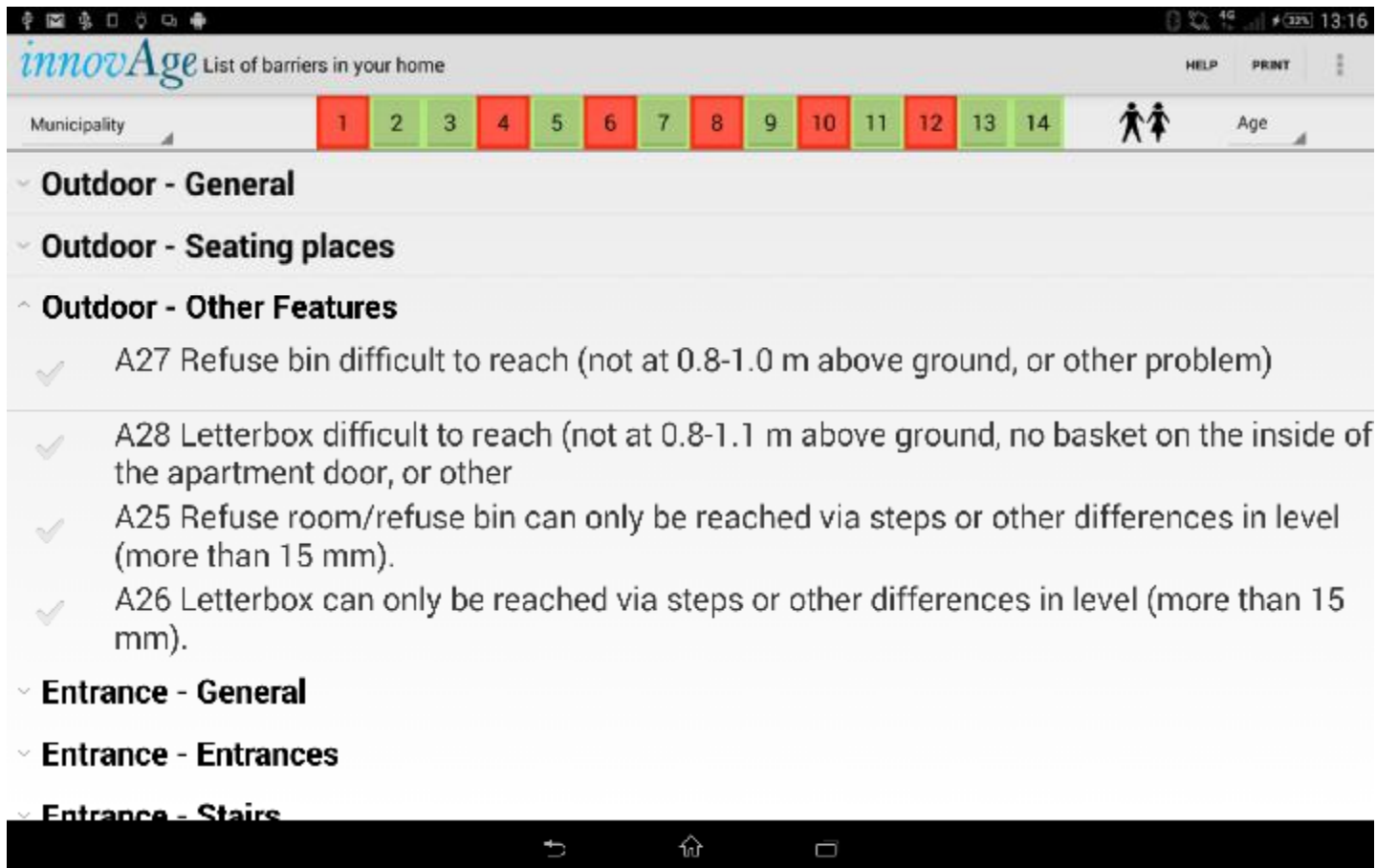
The screenshot shows the 'innovAge User Profile' interface. On the left, there is a vertical navigation bar with 14 numbered buttons. The buttons are color-coded: 1 (red), 2 (green), 3 (green), 4 (red), 5 (white with black border), 6 (blue), 7 (blue), 8 (blue), 9 (blue), 10 (blue), 11 (blue), 12 (blue), 13 (blue), and 14 (blue). The main content area displays the question: '5. Do you have problems with balance or do you get light-headed?'. Below the question are two large blue buttons labeled 'YES' and 'NO'. At the top right of the app, there are links for 'GLOSSARY', 'HELP', and 'RESET'. The bottom of the screen shows a standard Android navigation bar with back, home, and recent apps icons.

# App testing continued

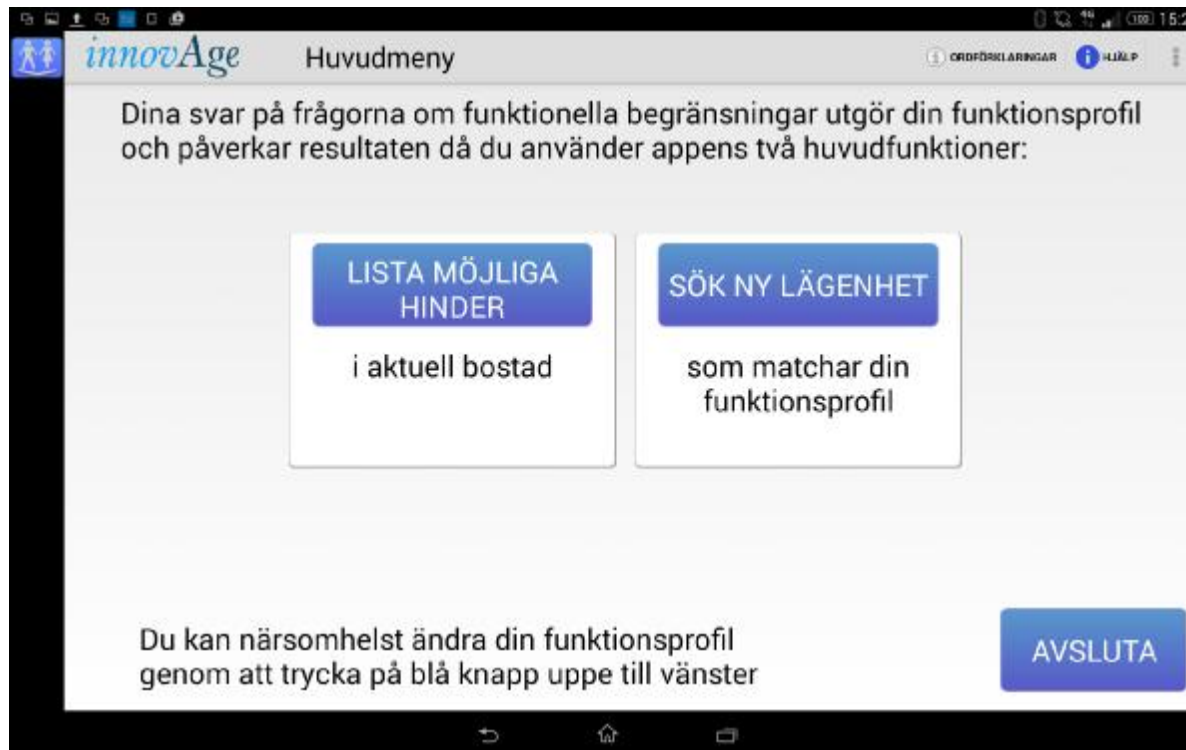




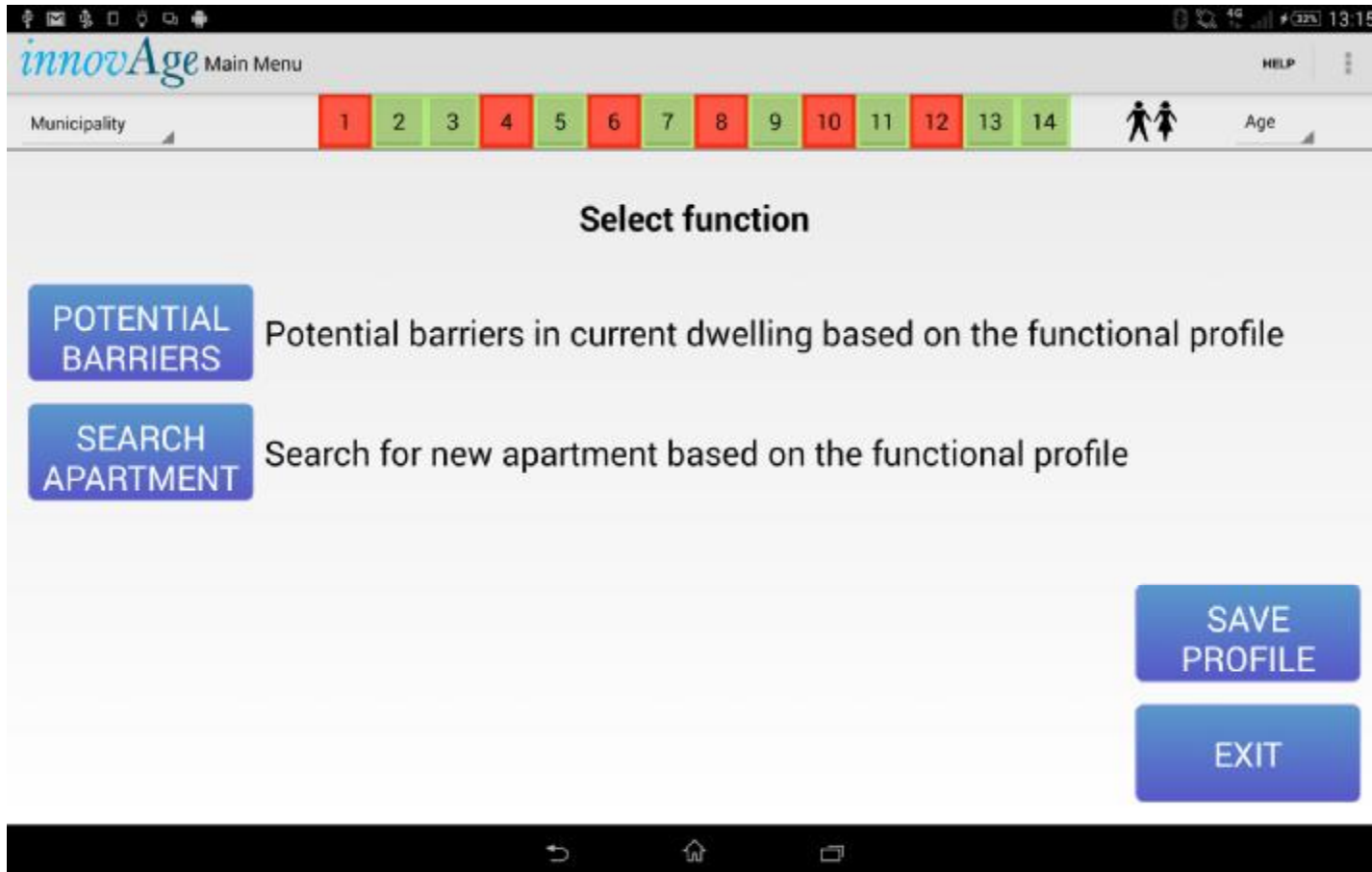
# App testing continued



# Huvudmeny – Lista hinder



# App testing continued



# Apartments Ranked According to Accessibility

 **innovAge** List of apartments GLOSSARY HELP PRINT

Match	Address	Floor	Lift	Rooms	Monthly rent (1000kr)	MAP	11
Accessibility	Karlshamn		YES	>=2	*-*		
79%	Regeringsgatan	1	1	2	4750		
79%	Lupinvägen	0	1	2	5225		
77%	Skyttevägen	3	1	3	7362		
76%	Prinsgatan	2	1	2	5462		
76%	Prinsgatan	1	1	3	6175		
76%	Stationsvägen	3	1	4	6650		
72%	Matrosgatan	4	1	2	4987		
72%	Stålavägen	0	1	5	9262		
70%	Iglavägen	0	1	2	4987		
67%	Sölvesborgsvägen	4	1	3	5225		
57%	Regeringsgatan	1	1	3	6887		

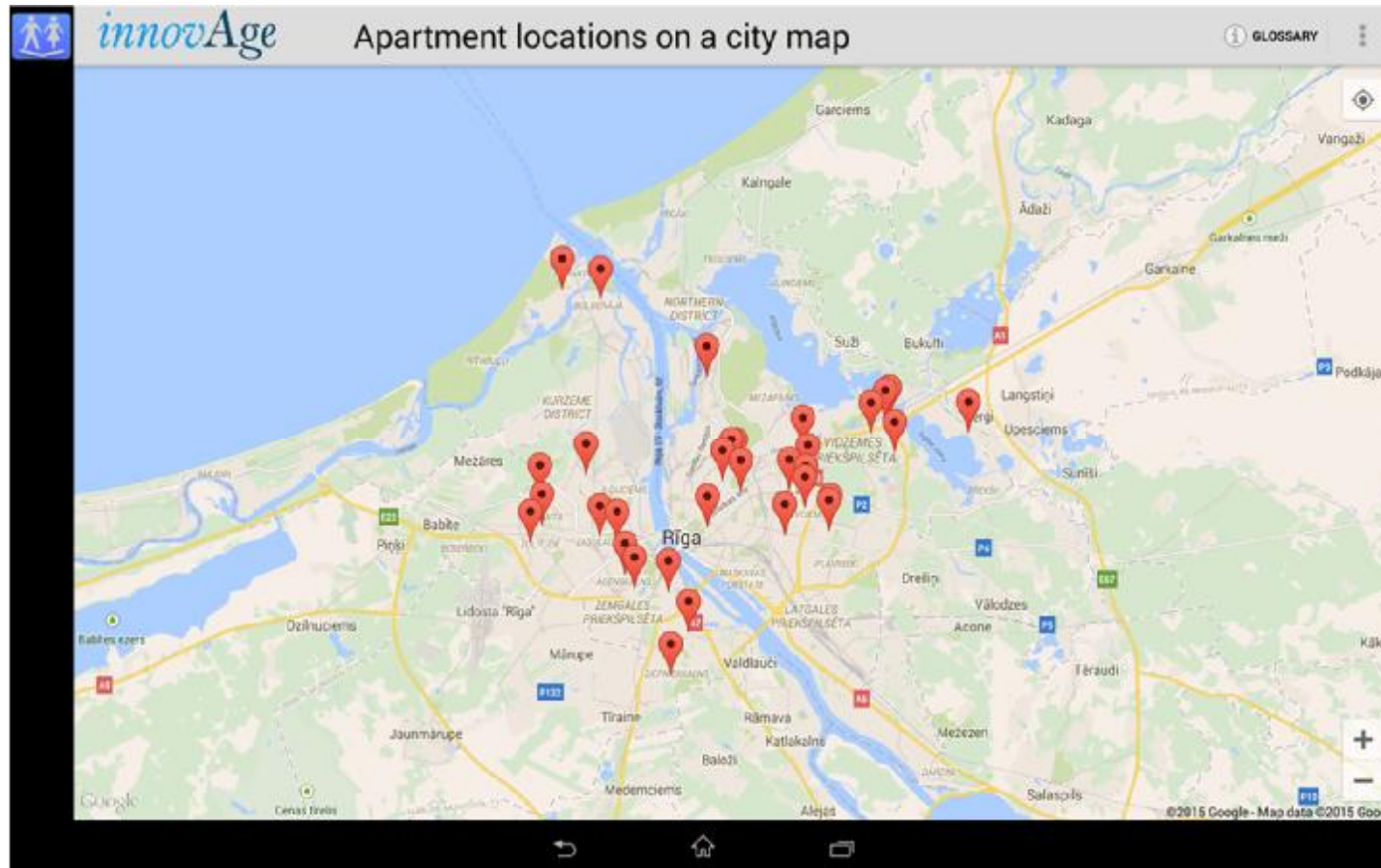
# Detailed Environmental Barrier Information

The screenshot displays the innovAge mobile application interface. At the top, the logo 'innovAge' is visible on the left, and navigation options 'GLOSSARY', 'HELP', and 'PRINT' are on the right. The main header reads 'Selected apartment'. Below this is a table with columns: Match, Address, Floor, Lift, Rooms, and Monthly rent (1000kr). A blue 'MAP' button and a blue 'INFO' button are positioned to the right of the table. The table shows a 79% match for an apartment at Regeringsgatan, Karlshamn, on floor 1, with 1 lift and 2 rooms, for a monthly rent of 4750. Below the table is a list of environmental barrier categories, each with a dropdown arrow: Outdoor - Path surfaces, Entrance - Doors (expanded to show 'B9 Doors that do not stay in open position/close quickly.'), Entrance - Stairs, Entrance - Lifts, Entrance - Sitting-out place/balcony, Indoor - Indoor - Kitchen and laundry room, Indoor - Hygiene area, and Indoor - Controls and operable hardware in other locations than kitchen, laundry room or...

Match	Address	Floor	Lift	Rooms	Monthly rent (1000kr)	
79%	Regeringsgatan, Karlshamn	1	1	2	4750	<a href="#">MAP</a> <a href="#">INFO</a>

- ~ Outdoor - Path surfaces
- ^ Entrance - Doors
  - B9 Doors that do not stay in open position/close quickly.
- ~ Entrance - Stairs
- ~ Entrance - Lifts
- ~ Entrance - Sitting-out place/balcony
- ~ Indoor - Indoor - Kitchen and laundry room
- ~ Indoor - Hygiene area
- ~ Indoor - Controls and operable hardware in other locations than kitchen, laundry room or...

# Additional Information Using Existing Interfaces





# Usability Tests Recently Completed

In Sweden and Latvia:

- Test panel participants: (65+) with varied functional profiles (N=10 per country)
- Second round in Sweden (N=10)

*Data on user experiences:*

- Individual and group interviews
- Standardized questionnaires



# Usability tests continued

Older persons (panelists) used the ICT tool to test its feasibility for individualised identification of optimal and less optimal housing options

- Using structured data collection formats as well as group-based open interviews (state-of-the art methods for usability testing) data is collected on user experiences in both countries
- An iterative process with redesigns is used in successive panel testing



# Usability tests continued

Some preliminary results of the usability tests:

- 45 % of the issues raised concerned the content of the app
- 39% of the issues concerned the functionality
- 8% concerned navigation
- 8% concerned terminology

Based on the analysis of all the issues raised by the user panels, a second test version is now developed and will be released for further usability tests in Sweden

# Towards Project Completion

- A social innovation based on scientific principles for assessment of person-environment interactions
- Research process guided by principles of active user involvement
- From needs and desires expressed by senior citizens to empowerment regarding housing needs



Scaling up across Europe?  
Marketing the ICT tool?



LUND  
UNIVERSITY

# Publications

*Int. J. Environ. Res. Public Health* **2014**, *11*, 1-x manuscripts; doi:10.3390/ijerph110x0000x

OPEN ACCESS

International Journal of  
Environmental Research and  
Public Health  
ISSN 1660-4601  
www.mdpi.com/journal/ijerph

*Article*

## Cross-National User Priorities for Housing Provision and Accessibility - Findings from the European innovAge Project

Maria Haak<sup>1\*</sup>, Björn Slaus<sup>1</sup>, Frank Oswald<sup>2</sup>, Steven M. Schmidt<sup>1</sup>, Joseph M. Rimland<sup>3</sup>,  
Signe Tomsone<sup>1,4</sup>, Thomas Ladö<sup>1</sup>, Torbjörn Svensson<sup>1</sup>, Susanne Iwarsson<sup>1</sup>

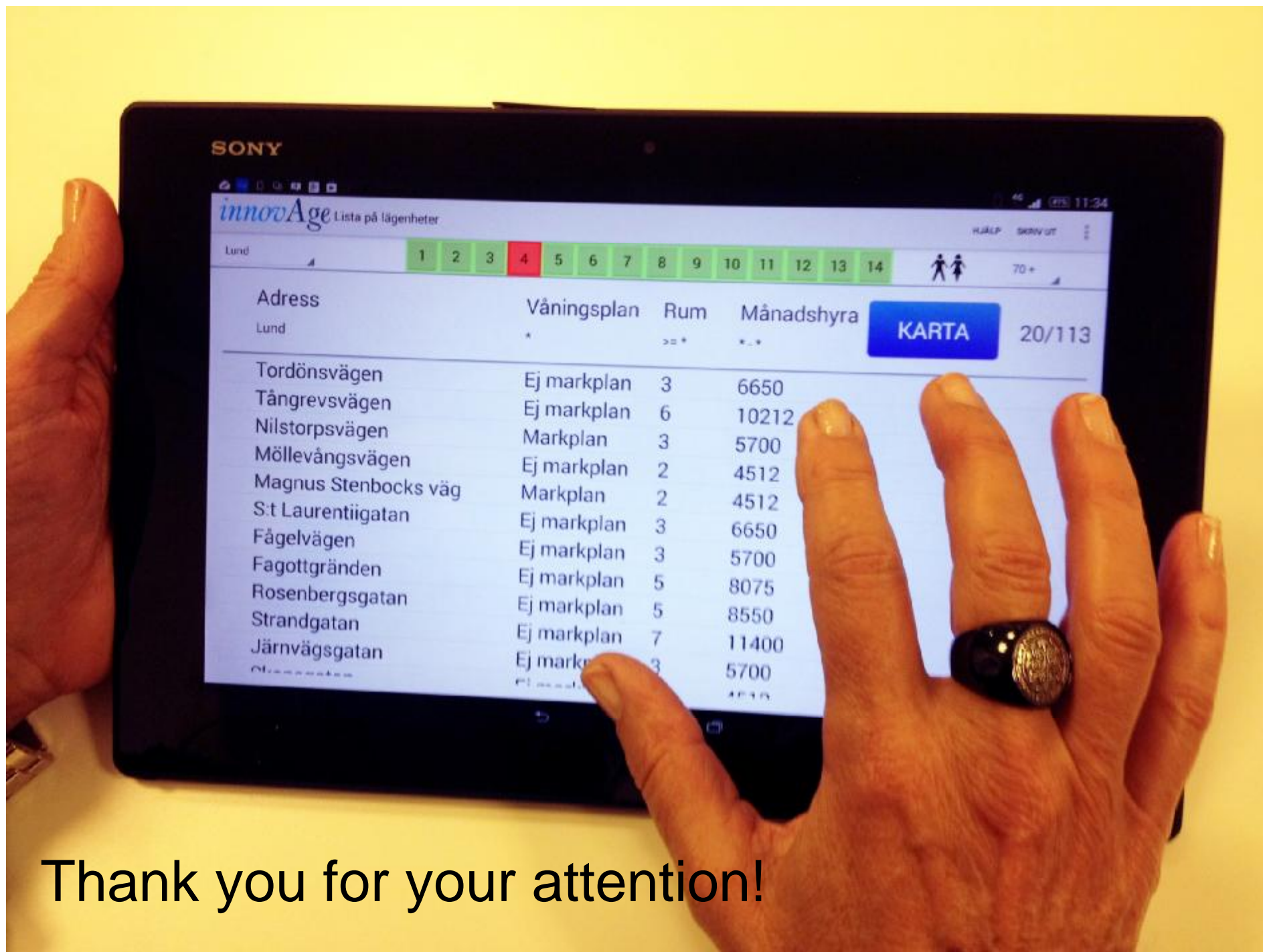
\*\*\*\*\*

Kylberg, M., Haak, M., Ståhl, A., Skogh, E., & Iwarsson, S. (2015). *Research in brief: Research with and about user participation*. Stockholm, Sweden: Forte. In press.

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Thank you for your attention!