



## **MOBISERV – FP7 248434**

An Integrated Intelligent Home Environment for the  
Provision of Health, Nutrition and Mobility Services to the  
Elderly

### ***Deliverable***

#### **D8.6: MOBISERV Closing Workshop Proceedings**

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# Executive Summary

MOBISERV developed a proactive personal service robot companion system, integrated with innovative wireless (bio-) sensors, localisation and communication technologies, smart home utilities, and wearable monitoring equipment for supporting independent living of older persons.

Dissemination of the project results has been achieved in many different formats and directions. See project deliverables D8.5 “*Plan for dissemination and use of foreground*” and D8.7 “*Report on dissemination events*” for more information.

In this report presents the final MOBISERV workshop that has been organized by project consortium partner AUTH in close cooperation with the Greek Association for Alzheimer Disease and related Disorders. The material produced as well as short descriptions of the 15 presentations are included in this deliverable. The Workshop has been broadcasted live by the broadcasting facilities of the Aristotle University of Thessaloniki and the entire video of the workshop is available from the AUTH conference servers at [www.auth.gr/video/16119](http://www.auth.gr/video/16119).

# Glossary

Term	Explanation
AAL	Ambient Assisted Living
AI	Artificial Intelligence
BR	Breathing Rate
ECG	Electrocardiogram
GAADR	Greek Association of Alzheimer's Disease and related Disorders
GUI	Graphical User Interface
HRI	Human Robot Interface
MOBISERV	An Integrated Intelligent Home Environment for the Provision of Health, Nutrition and Well-being Services to Older Adults
MRI	Magneto Resonance Imaging
ORU	Optical Recognition Unit
PRU	Physical Robotic Unit
SHACU	Smart Home Automation and Communication Unit
WHSU	Wearable Health Support Unit

# 1 Introduction

This report presents the workshop that has been organized in the city of Thessaloniki in Greece on the 2<sup>nd</sup> of July 2013 by MOBISERV in close cooperation with the Greek Association of Alzheimer's Disease and Related Disorders (GAADR).

The MOBISERV research project organized this closing workshop of the project with the title "*New Technologies for Active Aging*". It took place in lecture hall 1 of the Aristotle University Research Dissemination Centre in Thessaloniki.

For more information about the Greek Association of Alzheimer Disease and Relative Disorders, please visit [www.alzheimer-hellas.gr](http://www.alzheimer-hellas.gr).

## 1.1 Scope of the workshop

The workshop aspired to give an impression of the advances in the field of active aging using new technologies for health professionals, older people, and caregivers, to create contacts between health professionals, scientists, and students (of Informatics, Medicine, Psychology, etc.), and to allow the exchange of experience, aiming to inform students and health professionals.

Among the subjects that have been discussed were the needs of older people and ways to cover those needs through new technologies, memory enhancement computer software, social robots in service of mental deficiency patients and others.

## 2 Workshop Program

The title of the workshop was “*New Technologies for Active Aging*” and had 3 sessions of 5 presentations each. That is, in total 15 presentations of technologies that have been developed for helping older persons. Next to MOBISERV, also results of other related EU-funded projects like Dem@Care<sup>1</sup> and Long Lasting Memories<sup>2</sup> and national projects have been presented in the workshop. The detailed program in English was as follows:

### **8:30 – 10:30 Session 1**

*Chairs: Leontios Chatzileontiadis & Magda Tsolaki*

- **Cognitive processes of mental deficiency patients** by Vasiliki Kosmidou
- **New technologies and neuropsychological evaluation: challenges and dilemmas** by Stelios Zigouris
- **Combining Artificial Intelligence methods for the diagnosis of mental deficiency stages from MRI data** by Christos Anagnostopoulos
- **Prediction and diagnosis of visual, spatial and functional deficiencies of the older persons and the patients with mental deficiency using 3D virtual environments and serious games based on scenarios** by Konstantinos Votis
- **Needs of the elderly that New Technologies could cover** by Magda Tsolaki

### **11:00 – 13:00 Session 2**

*Chairs: Panagiotis Mpamidis & Tsiatsios Thrasivoulos*

- **Memory and attention exercises on a Personal Computer and results** by Stavros Zafiropoulos
- **Brain^Bright application for the Prevention and Treatment of the Alzheimer Disease** by Dimitrios Dranidis

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<sup>1</sup> Dementia Ambient Care: Multi-Sensing Monitoring for Intelligent Remote Management and Decision Support – [www.demcare.eu](http://www.demcare.eu)

<sup>2</sup> Long Lasting Memories: Mind and Body Fitness for Life – [www.longlastingmemories.eu](http://www.longlastingmemories.eu)

- **A symbiotic approach of the Alzheimer community using new technologies** by Leontios Chatzileontiadis
- **Design of cognitive exercises for supporting patients with dementia** by Anastasios Karakostas
- **Multidimensional evaluation of results from the wide application of physical and mental exercise games in the elderly** by Panagiotis Mpamidis

### **13:00 – 15:00 Session 3**

*Chairs: Ioannis Pitas & Stavros Dimitriadis*

- **Social robots in the service of older persons with mental deficiency** by Anastasios Tefas and Ioannis Pitas
- **Mental deficiency at home: integrated system for long distance observation and caring services** by Alexia Mpriasouli
- **Touch interfaces and instructional robotics as tools for the cognitive exercise of mental deficiency patients** by Stavros Dimitriadis
- **Application of heuristic computational biology techniques for the gene treatment of mental deficiency** by Panagiotis Vlamos, Athanasios Alexiou, and Maria Psicha
- **Services and tools for remote support of patients with dementia** by Ipokratis Apostolidis



## 2.1 Programme booklet

Below, the programme booklet is shown (as appeared in Greek).



Back and front of the programme booklet.



Inside of the programme booklet.

## 2.2 Media attention

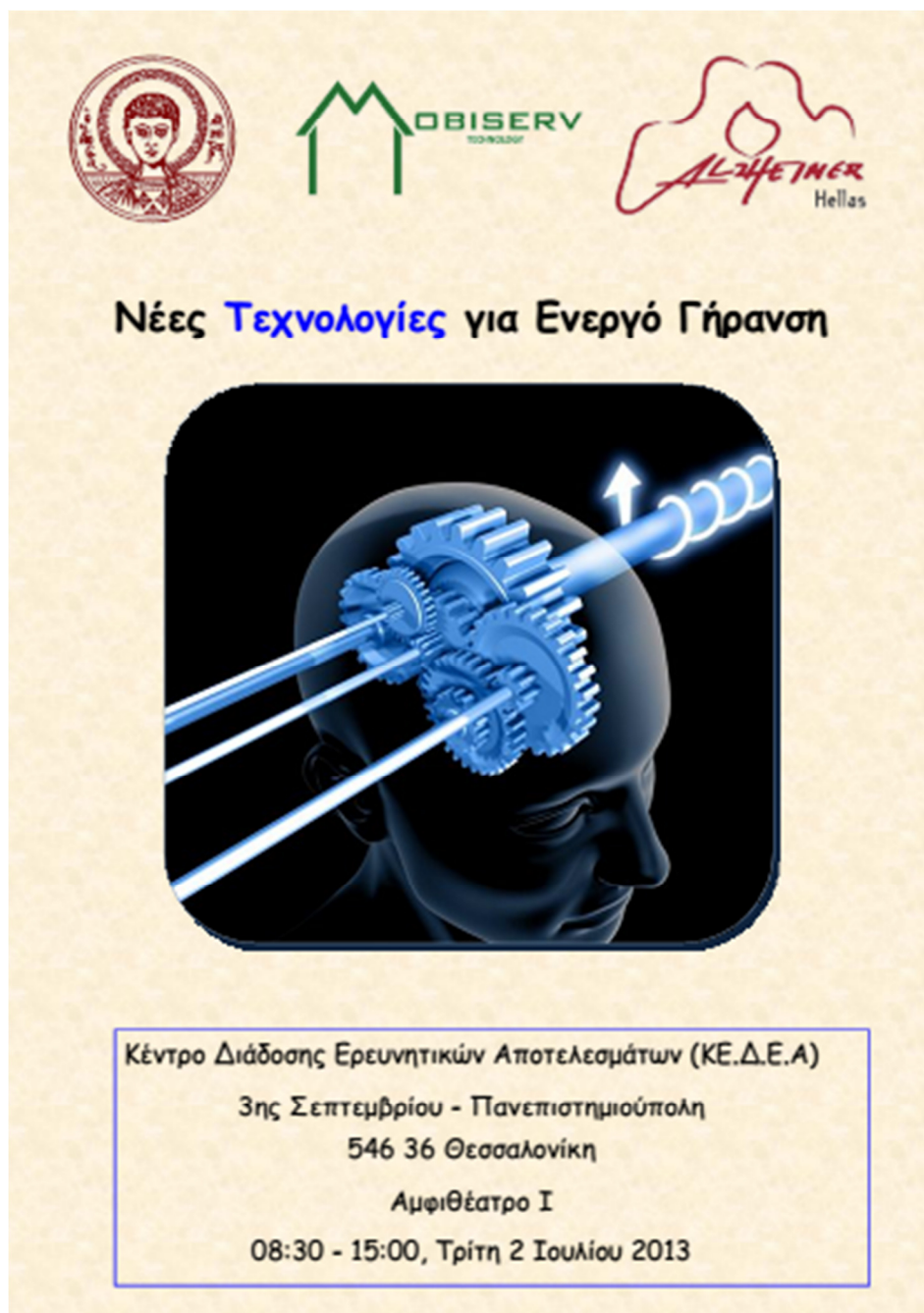
The workshop has been broadcasted live using AUTH broadcasting services. The recorded video of the entire workshop (more than 6 hours) can still be accessed from [www.auth.gr/video/16119](http://www.auth.gr/video/16119). The MOBISERV presentation starts at 4 hours and 25 minutes.

Before, and after the workshop, several articles regarding the MOBISERV workshop have been presented in several Greek newspapers and websites. Some examples:

- [www.agelioforos.gr/default.asp?pid=7&ct=1&artid=182440](http://www.agelioforos.gr/default.asp?pid=7&ct=1&artid=182440)
- [www.agelioforos.gr/default.asp?pid=7&ct=1&artid=182284](http://www.agelioforos.gr/default.asp?pid=7&ct=1&artid=182284)
- [www.agelioforos.gr/default.asp?pid=7&ct=1&artid=181430](http://www.agelioforos.gr/default.asp?pid=7&ct=1&artid=181430)

### 3 Workshop poster

To attract attention, the following poster has been created and distributed:



## 4 Workshop presentations

### 1. Vasiliki Kosmidou: Cognitive processes of mental deficiency patients

The cognitive abilities of patients with mental disorders and new tests that are used for diagnosis of mental disorders have been presented.



### 2. Stelios Zigouris: New technologies and neuropsychological evaluation: challenges and dilemmas

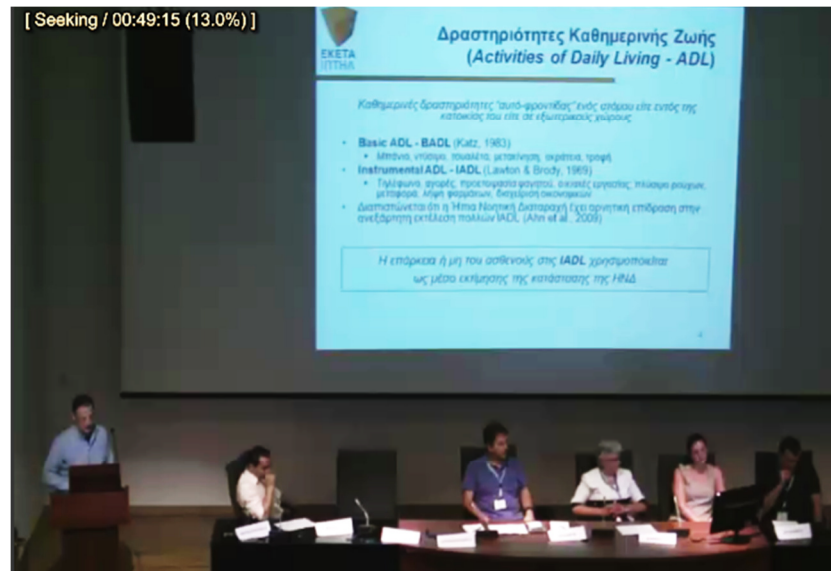
New technologies for assessing the neuropsychological status of the patients have been presented by Stelios Zigouris who is a clinical psychologist working with people with mental disorders.





### 3. Konstantinos Votis: Prediction and diagnosis of visual, spatial and functional deficiencies of the older persons and the patients with mental deficiency using 3D virtual environments and serious games based on scenarios

An innovative 3D virtual environment has been presented, in which serious games with predefined scenarios can be set-up and used for diagnosis of mental disorders of patients.



### 4. Christos Anagnostopoulos: Combining Artificial Intelligence methods for the diagnosis of mental deficiency stages from MRI data

A method for diagnosis of mental deficiency using MRI data and classification with machine learning techniques have been presented.



## 5. Magda Tsolaki: Needs of the elderly that New Technologies could cover.

Professor Magda Tsolaki, presidents of the Greek Association for Alzheimer Disease and related Mental Disorders analysed the needs of older persons especially related with the mental disorders and discussed the potential use of new technologies for helping them.



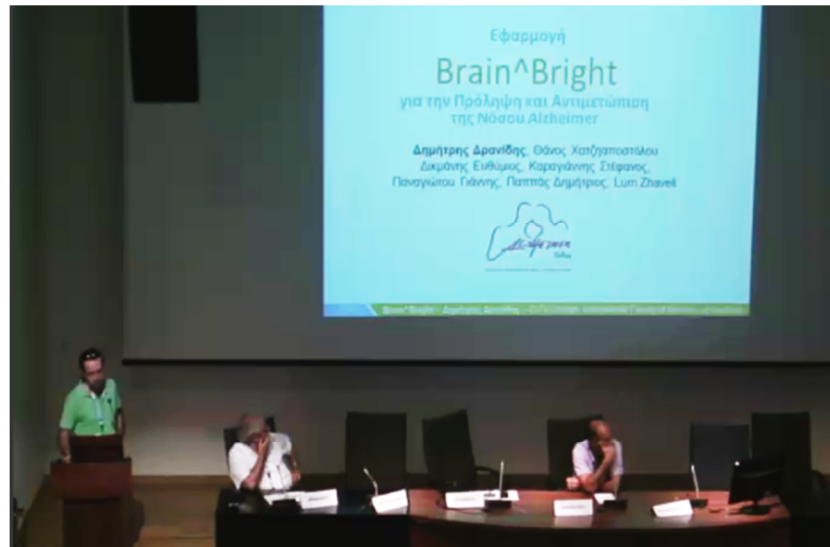
## 6. Stavros Zafiropoulos: Memory and attention exercises on a Personal Computer and results

Exercises that have been developed for helping memory and attention and are applied to older persons in the daycentres of the Greek Alzheimer Association have been presented. These exercises have been developed and used using personal computers.



## 7. Dimitrios Dranidis: Brain^Bright application for the Prevention and Treatment of the Alzheimer Disease

An application called BrainBright that can be used for helping people suffering from Alzheimer disease has been presented.



## 8. Leontios Chatzileontiadis : A symbiotic approach of the Alzheimer community using new technologies.

The results of the research project “Symbiosis” that deals with experiences of people suffering from Alzheimer that use new technologies has been presented by Prof. Leontios Chatzileontiadis.



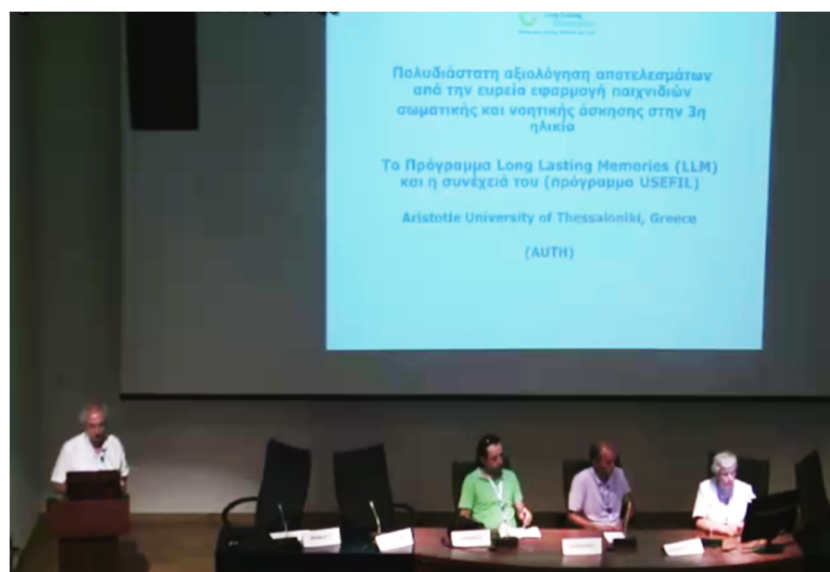
## 9. Anastasios Karakostas: Design of cognitive exercises for supporting patients with dementia

The design of cognitive exercises for supporting patients with mild dementia using e-learning methods has been presented in the workshop by Dr. Karakostas.



## 10. Panagiotis Mpamidis: Multidimensional evaluation of results from the wide application of physical and mental exercise games in the elderly.

Prof. Mpamidis has presented the results of the EC funded FP7 project Long Lasting Memories and the on-going project USEFIL. The results indicated that physical exercises are indeed very useful for people suffering from dementia.





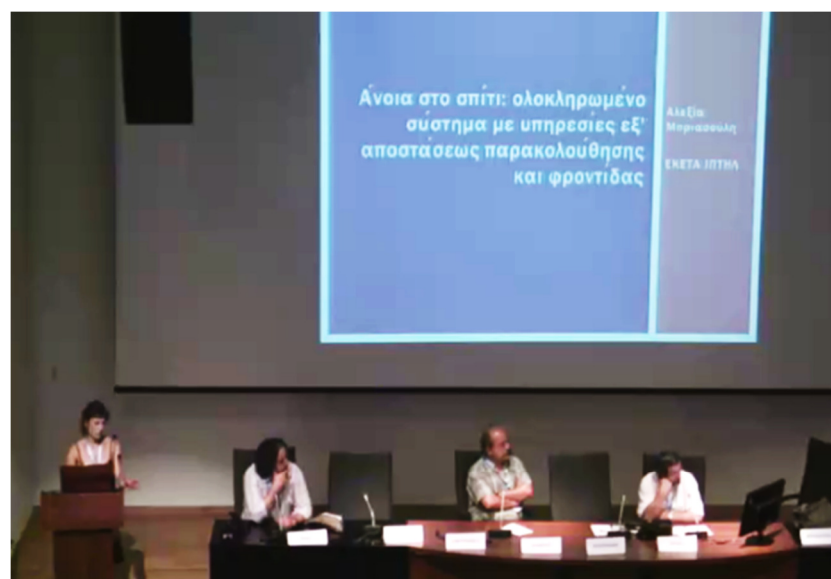
### 11. Anastasios Tefas, Ioannis Pitas: Social robots for assisting people suffering from dementia.

The broad objectives, activities and results of MOBISERV have been presented by Anastasios Tefas, with a focus on visual information analysis methods for assisting older persons with mental disorders.



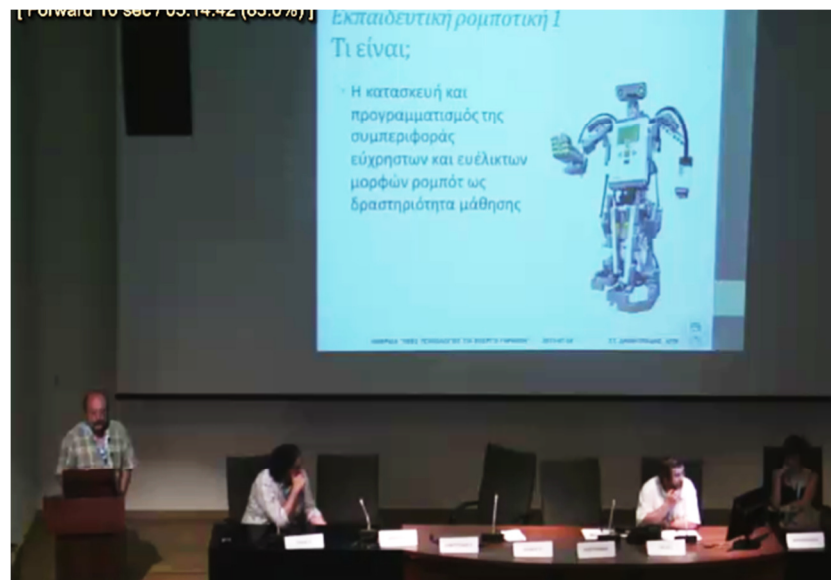
### 12. Alexia Mpriasouli: Mental deficiency at home: integrated system for long distance observation and caring services

The objectives and initial results of the EU-funded FP7 project Dem@care have been presented in the workshop. The project tries to set an integrated system for remote assistance to people with dementia.



### 13. Stavros Dimitriadis: Touch interfaces and instructional robotics as tools for the cognitive exercise of mental deficiency patients

The use of learning robotics to older persons with mild dementia have presented by Prof. Dimitriadis. The scope of the presented project is to research if learning techniques using robotics that are used to small children can be also help older persons with dementia.



### 14. Panagiotis Vlamos, Athanasios Alexiou, Maria Psicha: Application of heuristic computational biology techniques for the gene treatment of mental disorders.

Gene treatment of mental disorders using computational biology methods has been presented in the workshop.



## 15. Ipokratis Apostolidis: Services and tools for remote support of patients with dementia

Novel tools and services for supporting patients with dementia over a distance have been presented in the workshop.



## 5 Conclusion

The MOBISERV closing workshop has been a very successful event. The total of 15 presentations have attracted many persons that work in the area of assistive living and active ageing.

During the whole day, on average there were around 70 people present in the audience.

The Greek Association for Alzheimer Disease and Related Disorders has been very positive in co-organizing this event with MOBISERV in order to disseminate the results of the projects, but also to attract many other presentations of other European and National projects and initiatives that work on active aging.

As a direct result, a panel of experts working in new technologies for active aging has been initiated in order to search for new ways of cooperation both in a national level as well as in European level.