

# Global Summit on **Telemedicine & eHealth**

August 17-18, 2015 Houston, USA

## Designing smart home environments for unobtrusive monitoring for healthier lives: The use cases of USEFIL and REAAL

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Elderly people face enough challenges to their independence often related to feeling loneliness to a decline in mobility or cognitive problems. These challenges cause direct or indirect health problems. Within the realm of successful implementation of EU funded projects innovative infrastructures, architectures, IoT and WoT frameworks and applications have been developed for providing e-Health and wellbeing services to cope with this problem. The use cases that will be presented intend to cope with ageing diseases providing advanced, affordable and unobtrusive monitoring and web communication solutions for seniors living independently. The developed systems enhances social care and medical service provision by exploiting "frugal" ICT solutions. The main system components that have been used are low cost video cameras equipped with wireless communication capability to provide monitoring of person's movements, emotional and physiological parameters. Wrist-worn smart phones able to recognize daily activities and monitor some physiological parameters, tablet PC to act as one of the end-user interaction devices with the focus on provision of social awareness of friends and relatives, Web-enabled TV as the main end-user interaction device with end users, machine learning algorithms able to provide decision support and environmental and energy consumption monitoring sensors. Aim of the presentation is to demonstrate the use of these ICT technologies which were implemented and are under continuous validation over the last three years with real end users, their unofficial carers and doctors. Results demonstrate that the technology readily succeeds in meeting the study's initial objectives.

### Biography

Papadopoulos Homer holds a Physics degree and a Pre-PhD on telecommunications from the University of Athens and a Bio-design graduate certificate from Stanford University US. He has an MBA at Warwick University and he holds a PhD from IS/IT Department of Bath University UK. He has been working for NCSR "Demokritos" for 15 years (now under permanent contract at NCSR "D"DAT) managing various European funded Research programs within the fields of e-services, mobile services and technologies and broadband telecommunication networks. He has published several papers in journals and international conferences. Recently, he has set up a spin off private company, Syndesis Ltd., with a main focus to exploit commercially state of the art bio-medicine technologies and electronic health services.

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