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### **Keynote Title: A Do-It-Yourself Approach to Ambient Assisted Living**

#### **Abstract**

Over the past 20 years, several cognitive orthotics were designed and implemented and evaluated at DOMUS lab. The resulting set of orthotics can support a wide variety of activities of daily living (ADL) to foster autonomy at home for people with cognitive impairments. DOMUS lab has also developed a design approach that relies on the integration of living labs, participatory design and interdisciplinarity to develop relevant cognitive orthotics. However, there are as many supervision and assistance scenarios as there are people and homes. Moreover, despite the inclusion of caregivers and people with cognitive deficits in the design process, they remain dependent on researchers and computer scientists for the design and implementation of their smart home. This is why we are currently developing a platform and services that will allow caregivers and elderly people to design, install, customize, use and evolve their own smart home through a "do-it-yourself" (DIY) approach. This is a very complex challenge in terms of usability, knowledge (technology, health and design) and integration with healthcare and society at large.

Our presentation will first use three successful cognitive orthotics we developed to illustrate how AAL could be applied to monitoring of activities of daily living, meal preparation and night accompaniment. Then we will present the core elements of our DIY approach to AAL.



**Sylvain Giroux** is a professor at the Department of Computer Science at the University of Sherbrooke, Canada. He received a Ph.D. in computer science from the University of Montreal in 1993. His professional experience is well balanced between academic institutions and private corporations. As a result, Sylvain Giroux has contributed to the development of information systems in transdisciplinary contexts and domains as varied as distance learning, geophysics, electronic commerce, tele-medicine, task-support systems, cognitive assistance and smart homes. His current research interests are cognitive assistance, telemonitoring, smart homes, Internet of things, activity recognition, augmented reality, and cryptocurrencies.

Sylvain Giroux co-founded DOMUS, an interdisciplinary laboratory of the University of Sherbrooke (<http://domus.usherbrooke.ca>). DOMUS has an extensive research background in using participatory design, pervasive computing, ambient intelligence, and living labs to design, explore, and evaluate a wide range of innovative solutions for cognitive assistance aimed to foster the autonomy of people with Dementia, Alzheimer disease, mild cognitive impairments, traumatic brain injury (TBI).