

Technical Abstract

Title: myPad – A Portable Universal Console to Enable Older Adults to Safely Accomplish Instrumental Activities of Daily Living

The elderly population (people 65 years and over) will continue to grow as the baby boomer generation ages. Not only is the elderly population expected to rapidly expand during the next two decades, their life expectancy is lengthening, and there is a growing trend towards aging in place. Unfortunately, as people age, their strength and energy diminishes, and their susceptibility to disability increases dramatically. Strategies and tactics to reduce the risk of falls are essential, as falls often lead to permanent changes in the health and independence of the individual, or worse.

This project will demonstrate the technical merit, feasibility and cost effectiveness of combining portable console technology with an innovative approach and state-of-the-art software to deliver a universal console system capable of removing barriers in independent living settings. Phase I will specifically focus on helping aging adults safely and independently accomplish typical instrumental activities of daily living by eliminating unnecessary trips and reducing the physical effort and complexity in laundry tasks.

Specific Phase I objectives include: 1) determine end user requirements, 2) develop a proof-of-concept prototype of the system, and 3) evaluate of the utility of the prototype with actual elderly individuals who represent a cross-section of functional limitations.

Anticipated Results

Barriers to living independently will be reduced for people who are aging and may have one or more functional limitations (such as reduced vision, hearing, mobility or cognition).

Because myPad will incorporate Transgenerational and Universal Design principles, it will significantly increase the accessibility of major appliances in the home, and could become a prototype for introducing mobile controls for older adults. myPad reduces the physical effort required to perform typical instrumental activities of daily living by eliminating: un-necessary trips, reaching and manipulating mechanical knobs, complex and hard-to-see displays. This is significant due to the prevalence of sensory-motor impairments, arthritis and other debilitating diseases.

The benefits of myPad to the elderly in supporting them with the technology to safely and cost effectively age-in-place is enormous.

Potential Commercial Applications

The myPad system meets a critical need for the elderly and people with disabilities as those populations have been underserved by existing technology for quite some time. The demand for the myPad is expected to be high among the target populations who wish to remain in their own homes, driven by 1) their need to reduce the risk of falls and unnecessary trips, 2) their need to be able to activate and control appliances even though a functional limitation or disability may preclude them from operating the machine based controls (turning knobs, reading or seeing

settings), and 3) the transgenerational design of the device that enables the system to be tailored to the needs of the individual (I.e. people who have reduced cognition; sensory-motor impairments or other debilitating diseases). There is also an anticipated demand among typically able-bodied users who wish to easily interact with major appliances and other systems (HVAC, security, etc) within their homes. Efforts made on this project can readily be leveraged to other applications within this population, as well as other populations requiring assistive technologies. The range of appliances and items in the home that can be remotely monitored and controlled by the myPad system will be expanded as the core technology required to support “Green”, or Smart grid technology becomes increasingly adopted by commercial appliance manufacturers.