Overview

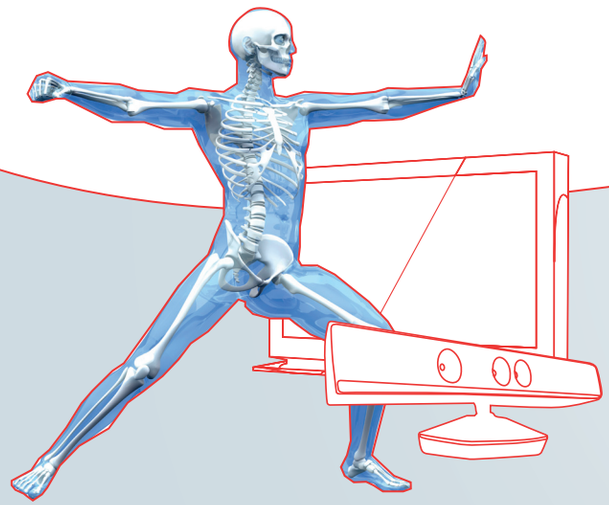
The aim of iStoppFalls is to develop and implement ICT based technologies which can be easily integrated in daily life practices of older people living at home, and which allow for exercise training and fall risk assessment based on discrete measuring technologies and adaptive assistance functions.

The Senior Mobility Monitor (SMM) will continuously monitor mobility in daily life and will provide quantitative information on frequency, duration and type of mobility activities and qualitative information on balance function and muscle power.

Our Kinect based fall preventive exercise training program (Exergame) will facilitate home-based falls preventative exercises, whereby data is acquired by unobtrusive sensing together with biomechanical modelling and optional heart rate data assessment.

The Knowledge Based System for fall prediction & prevention correlates these two sources of mobility information (SMM & Exergame), and in turn provides sufficient data to perform a trend analysis of these entities.

iStoppFalls will be based on user-centred design approaches, and thus provides advanced Human Computer Interaction (HCI) adjusted to the capabilities of our older adult users (usability & accessibility).



Consortium Partners

University Siegen, Germany (Coordinator)
German Sports University Cologne, Germany
AiT Austrian Institute of Technology, Austria
Instituto de Biomecanica de Valencia, Spain
Philips Research Europe, Netherlands
Kaasa Solution GmbH, Germany
Neuroscience Research Australia, Australia

AIT Austrian Institute of Technology – Tomorrow Today

Deutsche Sporthochschule Köln – German Sport University Cologne

IBV – Instituto de Biomecánica de Valencia

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UNIVERSITÄT SIEGEN

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Key Figures

- FP7-ICT-2011-7 SubTopic 5.4.b
- ICT for Ageing and Wellbeing

- Budget: 5,35 Mio. Euro • EU-Funding: 3,29 Mio. Euro
- Duration: 3 Years • Project Start: October 2011
- Partners: 6 European + 1 Australian

iStoppFalls – ICT-based System to Predict & Prevent Falls

ICT based System to Predict & Prevent Falls

Improving health and quality of life of older adults living at home

Objectives

Overall outcomes / objectives of iStoppFalls are as follows:

Objective 1

iStoppFalls will help to reduce falls, and thus improve quality of life for older adults living at home.

Objective 2

iStoppFalls will offer improved fall prediction & prevention measures, and thus provide better assessment of fall risk for older adults living at home.

Objective 3

iStoppFalls will fit well into basic daily behavioural settings of older adults living at home and thus provides a lot of data by unobtrusive sensing (Kinect & SMM).

Objective 4

iStoppFalls will provide self-learning solutions with advanced reasoning based on trend analysis over time and an underlying knowledge based system.

Objective 5

iStoppFalls will provide advanced HCI technologies adjusted to the capabilities of older adult users (usability & accessibility).

By meeting these objectives, iStoppFalls helps to tackle health & cost problems which will threaten European Societies in face of a vastly increasing proportion of ageing citizens. This in turn will generate impacts with substantial benefits for the European Union to create feasible settings securing a high quality of life and independent living for their older adult citizens.

Work Packages

Research Work Packages

WP1: Requirements Analysis: Definition of Contents, Technical Infrastructure, and End User Needs

WP2: Content Definitions: Development of Exercise Contents & other Fall Prediction & Prevention Contents and Rules

Development Work Packages

WP3: Development of Exercise Software (Exergame & Biomechanics)

WP4: Development of Senior Mobility Monitor & Trend Analysis (Sampling Modules)

WP5: Development of Knowledge Based System (Fall Prediction & Prevention and eHealth System)

WP6: End-User Developments (Humans-in-the-Loop)

WP7: Development of iTV Application (Education & eInclusion)

Demonstration & Dissemination Work Packages

WP8: Main Evaluation Study (Europe & Australia)

WP9: Dissemination & Exploitation

Management Work Packages

WP10: Project Management

The Consortium

A coordinated, active and multidisciplinary team is central to this project to face challenges related to the development of technology-based solutions and implementation of evidence based fall risk assessment methods and prevention strategies.

iStoppFalls involves representatives of world-leading technology and research experts from both university and industry partners in Europe and Australia. The program will strengthen collaboration between research and technology, and thus will contribute to European excellence and competitiveness by producing new insights in this important field of work.

The iStoppFalls consortium has the required expertise in a range of technological and scientific areas, namely fall prevention & prediction, exercise programs & exergames, unobtrusive sensing, advanced reasoning, end-user accessibility, and planning & implementation of controlled randomized clinical trials.

All scientific partners have an outstanding scientific reputation, and many of them are leaders in their respective fields. The consortium has the required technology-related power provided by Philips, IBV, kaasa, and AIT, including the required exploitation expertise with both an innovative SME and a large enterprise. End-User usability & accessibility know-how as well as modern HCI concepts is provided by University Siegen, and experienced fall prevention & prediction as well as exercise know-how is guaranteed by our partners DSHS Cologne and Neuroscience Research Australia.