

Organization Information



Instituto de Biomecánica de Valencia (IBV)

Valencia, Spain

Javier Ferrís, R&D and Innovation Programmes Responsible

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Organization Information

Cooperation Profiles

ABOUT US

Instituto de Biomecánica de Valencia (IBV) is a non-profit private technological centre that studies the behaviour of the human body and its interaction with products, environments and services. Founded in 1976, the Institute is currently coordinated under the agreement of the Valencian Institute of Business Competitiveness (IVACE) and the Universitat Politècnica de València (UPV).

With the aim to improve competitiveness among the business sector, IBV promotes people's well-being through the combination of knowledge in areas such as biomechanics, ergonomics and emotional engineering, and its application to ten diverse sectors: (1) *Automobile and public transportation*, (2) *Sport*, (3) *Habitat*, (4) *Clothing*, (5) *Children and childcare*, (6) *Older people and ageing*, (7) *Rehabilitation and personal autonomy*, (8) *Occupational health and safety*, (9) *Healthcare technology*, and (10) *Tourism and leisure*.

As a Research Organisation, IBV can take part in the knowledge triangle of EIT Health and can participate in many research and innovation activities addressed to promote healthy living, support active ageing and improve healthcare thanks to the Institute's wide and interdisciplinary approach. In addition, IBV has strong experience in European Programmes: in the period 2007-2013, IBV participated in 64 European projects, being the coordinator in 23 of them, and obtained a total EU funding of € 15.5 million.

IBV is a **Core Partner** of EIT Health in the Co-location Centre of Spain and it is the coordinator of the Spanish Working Group 2.1 on *Workplace interventions*.

AREAS OF ACTIVITY

HEALTH MARKET SEGMENTS

- Well being
- Prevention
- Diagnostics
- Therapy
- Chronic Disease management

CHALLENGES / BUSINESS OBJECTIVES

- Promote Healthy Living / Lifestyle Intervention
- Self-Management of Health
- Active Ageing / Workplace Interventions
- Active Ageing / Overcoming Functional Loss
- Treating and Managing Chronic Diseases

EXAMPLES & CROSS CHALLENGES

- Motivate Active Personal Lifestyles
- Mobility and Independence Throughout Life
- Sustainable Continuum of Care to Support Active Living in Europe
- Leveraging Enabling Technologies and Exploiting Big Data

VALUE CHAIN

- Business Development
- Design / R&D / Engineering
- Testing & Analysis
- Service / Maintenance / Supply



ORGANISATION

Instituto de Biomecánica de Valencia (IBV)

COUNTRY

Spain

City: Valencia

TYPE

R&D Institution

SIZE

51-250 people

WEBSITE

www.ibv.org

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Cooperation Profiles: REQUESTS

Cooperation Request...

↳ **Matching workers' capacities and skills vs. task demands throughout working life**

IBV is being partner of the European FP7 project MAN-MADE. This project aims at defining new socially sustainable workplaces where the human dimension is a key cornerstone.

Workers are foreseen at the centre of the factory, on the one hand, in terms of workplace adaptation to skills, expertise and characteristics of each single worker and, on the other hand, in terms of capability to make the most out of worker's knowledge and potential across all age groups and roles, simultaneously fostering enhanced worker's safety. Analysis of the evolving functional capacities of workers and their relationships with task demands will be performed and results will be applied to design of tasks and workplaces, job selection, job allocation, training of workers, and return to work of injured workers.

MAN-MADE project promotes the vision of an effective integration of this anthropocentric factory within the social environment toward the implementation of context-aware factories that promote and take advantage of extended services to the workers in terms of accessibility, inclusiveness, efficiency and work satisfaction.

Expected benefits from MAN-MADE project will have a huge impact on the productivity rate and workers' performance due to the reduction of accidents, job risks and duration of sick-leaves (economic and social impact), and the improvement in workers' health and quality of life.

SOLUTION OR EXPERTISE SOUGHT (maximum 25 words)

Objective measurement of evolving functional capacities (physical, sensorial and cognitive).
ICT platform integrated into ICT management system of companies.
Algorithms for decision making in matching.

TYPE OF PARTNER SOUGHT (maximum 25 words)

(Mutual) insurance companies.
Departments of health, safety and human resources in companies.
Rehabilitation services.
Occupational risks prevention services.
ICT companies.

WHY ARE YOU LOOKING FOR THIS EXPERTISE/ PARTNERSHIP? ELEVATOR PITCH (maximum 35 words)

To involve all relevant key actors in a human-centric approach for processes related to design of tasks and workplaces, integrating social, legal, economic, health and engineering factors. To perform a demonstration in real operational conditions of MAN-MADE project results.

INNOVATION FORESEE: by design, by idea, Headstart? - CALL 2015? 2016? (maximum 20 words)

Innovation by Ideas call 2015. Societal challenge 2: Support Active Ageing. Business objective 2.1: Workplace interventions.

TYPE

Request

REQUESTED

Technical co-operation

OFFERED

Technical co-operation

DATE

April 30, 2015

Cooperation Request...

↳ **Intelligent Motion Analysis (IMA) – Novel technology that makes quantitative measurement of musculoskeletal problems**

IBV is participating in the European FP7 project IMA (Intelligent Motion Analysis). The idea is to develop an innovative easy-to-use diagnosis system that will make quantitative measurement of musculoskeletal conditions, compare them with available data both for healthy individuals and other patients, and indicate how the patient could be treated.

This project will result in a more accurate and low cost tool for quantitative measurement of musculoskeletal conditions, one of the most widespread and costly illnesses in society today. It will provide physiotherapists with wireless, light and easy to use measuring units that will enable them to organize their time better and perform more accurate diagnosis, providing faster diagnosis and treatment for their patients; and enhancing their earnings potential.

IMA project will present a new stage in physiotherapy and will provide professionals with technical devices that will benefit themselves, their patients and society as a whole. These novel technologies will offer a solution to the problem that an ageing and less mobile population presents today.

SOLUTION OR EXPERTISE SOUGHT (maximum 25 words)

Support from clinical partners is needed to demonstrate results from IMA project in real working conditions (hospital).

TYPE OF PARTNER SOUGHT (maximum 25 words)

Hospitals and ICT companies from any CLC and/or Innostars interested in performing a demonstration in operational environment of the techniques and devices resulted from IMA project.

WHY ARE YOU LOOKING FOR THIS EXPERTISE/ PARTNERSHIP? ELEVATOR PITCH (maximum 35 words)

Results from IMA project will be TRL6. Demonstration in operational environment (hospitals) is needed before commercialising the solutions.

INNOVATION FORESEE: by design, by idea, Headstart? - CALL 2015? 2016? (maximum 20 words)

Innovation by Ideas call 2015. Societal challenge 2: Support Active Ageing. Business objective 2.2: Overcoming functional loss.

TYPE

Request

REQUESTED

Research co-operation Technical co-operation

OFFERED

Research co-operation Technical co-operation

DATE

April 30, 2015

Cooperation Request...

↳ **Personalization of medical implants based on advance human modelling and additive manufacturing technologies**

IBV is working, with the support of different regional funded projects, in the development of a worldwide collaborative platform for the personalization of medical implants based on advance human modelling and additive manufacturing technologies to improve therapy and wellbeing.

Key enabling technologies (KET) to support this aim are:

- New additive manufacturing (AM) technologies and new nanomaterials (biocompatible, fatigue resistant, light) to produce custom made implants (e.g. dental, hip, croneal, knee);
- Advanced modelling tools for the 3D reconstruction of CT images with a seamless integration with the CAE analysis and the CAD process.
- Advanced CAE APIs based on parametric finite elements models of the human body to simulate the behaviour of the custom made implants.
- Knowledge based design criteria of custom made implants to systematize the design process.

The expected integrated result will be an online platform to produce custom-made implants, integrating the whole value chain: hospital, design centre, manufacturing company, testing laboratories, etc.

Expected single results will be:

- New additive manufacturing materials.
- New additive manufacturing machinery.
- New modelling tools: 3D scanning technology, 3D reconstruction of CT images.
- Advanced parametric finite element model of the human body and implant enabling the simulation of the implant behaviour and interaction with the representation of the patient's body.
- ICT ecosystem platform to support the integration of the distributed value chain for the customization of implants.

SOLUTION OR EXPERTISE SOUGHT (maximum 25 words)

Partners from the value chain for the customization of implants with expertise in design, modelling tools, simulation tools, manufacturing, clinical practice, etc.

TYPE OF PARTNER SOUGHT (maximum 25 words)

Hospitals, academic partners, implant manufacturers, manufacturers of materials for AM technology and manufacturers of AM machinery from any CLC and Innostars.

WHY ARE YOU LOOKING FOR THIS EXPERTISE/ PARTNERSHIP? ELEVATOR PITCH (maximum 35 words)

Demonstration in operational environment of design and manufacturing of different customized implants (e.g. dental, hip, croneal, knee) is needed before placing products and online platform into the market.

INNOVATION FORESEE: by design, by idea, Headstart? - CALL 2015? 2016? (maximum 20 words)

Innovation by Ideas call 2015. Cross-challenge C: Leveraging Enabling Technologies and Exploiting Big Data.

TYPE

Request

REQUESTED

Research co-operation Technical co-operation
Manufacturing agreement

OFFERED

Research co-operation Technical co-operation

DATE

April 30, 2015

Cooperation Request...

↳ **SIMPLIT: good for all, good for you**

The older persons enjoy more free time and, in general, a better financial situation. Their shopping habits have begun to change, and they have become an attractive sector for companies. This new situation poses new social and financial challenges, which require solutions to improve the quality of life of the older persons.

More than 80% of the older persons believe that companies never, or hardly ever, have them in mind when designing their products. People-centred design allows developing new products and services that meet the needs of the people who actually will use them.

According to this, IBV and the Spanish Association for Pensioners and Retirees (UDP) have developed SIMPLIT (www.simplit.es), a seal of approval that certifies that a product is comfortable, intuitive and easy to use. To obtain this seal, the product or service firstly must undergo an expert evaluation process that verifies the standards of the product (safety, ergonomics, quality) and secondly a usability test performed by older persons (end users). SIMPLIT values aspects such as the simplicity, ease of use and the effectiveness of a product or service.

Making it easy to read instructions on appliances or to become proficient in the use of new technologies; adapting furnishings with the height and depth of cupboards and shelves in mind; or improving the layout of kitchen designs – these are just a few examples of how the SIMPLIT certificate can be applied to everyday products and environments.

SOLUTION OR EXPERTISE SOUGHT (maximum 25 words)

First phase of methodological development and assessment has been finished. Now a methodology adaptation is needed for different products and services in self-management of health.

TYPE OF PARTNER SOUGHT (maximum 25 words)

Industry partners from any CLC or Innostars interested in performing a demonstration of SIMPLIT methodology with their real products/services.

WHY ARE YOU LOOKING FOR THIS EXPERTISE/ PARTNERSHIP? ELEVATOR PITCH (maximum 35 words)

SIMPLIT methodology needs to be adapted and demonstrated with real products/services from industry partners interested in addressing the older persons market.

INNOVATION FORESEE: by design, by idea, Headstart? - CALL 2015? 2016? (maximum 20 words)

Innovation by Ideas call 2015. Societal challenge 1: Promote Healthy Living. Business objective 1.1: Self-management of health.

TYPE

Request

REQUESTED

Technical co-operation

OFFERED

Technical co-operation

DATE

April 30, 2015

Cooperation Profiles: OFFER

Cooperation Offer...

↳ **Sleep screening service to detect and treat sleep disorders and sleeping problems**

The main effects of sleep deprivation include physical effects, cognitive impairment, diminishment of mental concentration and intellectual capacity, increase of the likelihood of accidents at work and during driving, and mental health complications. Inadequate rest impairs the ability to think, to handle stress, to maintain a healthy immune system and to moderate emotions (WHO).

IBV is working on a sleep screening service that will provide recommendations to improve the quality of sleep. A profiler will identify habits and work conditions and a wearable system will monitor activity and sleep patterns. Personalized programs related to nutrition, physical activity, work conditions, etc. will be established with the aim of improving users' rest.

IBV has already started to work on this research area with own resources and public funded projects, and it offers collaboration and wants to join and contribute to ongoing initiatives on this topic.

INNOVATIVE ASPECTS AND MAIN ADVANTAGES - ELEVATOR PITCH (maximum 50 words)

Cheap sleep monitoring systems exist but they do not integrate sleep screening and recommendations to sleep better (detection and treatment).

This service can help to reduce accidents at work and to improve results of companies.

MARKET APPLICATION (maximum 20 words)

The new sleep screening service is addressed to SMEs and large companies, so that they can offer the service to their workers ('active life programmes'). Sleep screening devices and techniques will be provided to the workers by their company or by external providers.

TYPE OF PARTNER SOUGHT (maximum 20 words)

A public-private partnership business model will be the best to bring the new services to the market: electronic systems developers, ICT companies, pharmaceutical industry, mutual insurance companies, public/private healthcare services, safety and human resources in companies, etc.

TYPE OF INNOVATION: BY DESIGN, BY IDEAS - CALL 2015? 2016? (maximum 15 words)

Innovation by Ideas call 2015. Societal challenge 1: Promote Healthy Living. Business objective 1.2: Lifestyle intervention.

TARGETED PRODUCT(S) OR SERVICE(S), END-USERS? (maximum 25 words)

Sleep screening service to detect and treat sleep disorders and sleeping problems offered to workers (end-users) by their companies (customer segment).

TYPE

Offer

OFFERED

Research co-operation Technical co-operation

DATE

April 30, 2015