

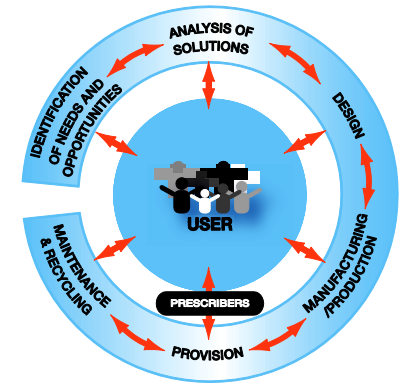
Contributions of IBV to EIT Health

Instituto de Biomecánica de Valencia (IBV, www.ibv.org/en) 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), and has an interdisciplinary team of 180 people. 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*.

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*.

IBV aims to create sustainable value by using **People-Driven Innovation** processes, in which innovation is achieved through the active participation of representative samples of citizens, ensuring that new goods and services consider the characteristics, preferences, needs and expectations of end users, and thus the recognition of its value and business success. This IBV's innovation approach covers the whole development cycle from the concept of innovative products and services to their design, development, validation, manufacturing, and marketing.

IBV's People-Driven Innovation approach and its application to diverse sectors can contribute and add value to all three prioritised **societal challenges of EIT Health**:



- **Societal Challenge 1. Promote Healthy Living**

This challenge includes *self-management of health*, which centres on enabling individuals and their families to take charge of their own health through detecting early signs of disease or functional loss and better understanding and monitor the effects of treatment, and *lifestyle interventions* aimed to develop products, services and citizen-oriented strategies to encourage positive lifestyle changes.

Related to this challenge, IBV participated in the European FP7 project **RUNSAFER**. Running has become one of the most popular sports in the last years and yields clear and numerous benefits on health; however, it has also a high incidence of related injuries. The aim of RUNSAFER project was to develop a new system consisting on a new running shoe, a mobile phone application and a web portal, in order to help to prevent injuries and provide runners with control training. The running system includes an embedded microelectronic measurement system able to gather and transmit the main biomechanical parameters during running. The information is wireless transmitted to the mobile phone of the runner while running, where a mobile phone application informs in real time the runner about the planned activity and performance achieved, suggesting modifications on the activity to change the running pattern in order to avoid injuries. After the running activity, the runner can download all the generated running information in a web portal, where services to manage such training data are available. This web portal allows the generation of training plans and the follow up of the training improvements, and it includes web 2.0 functionalities.

- **Societal Challenge 2. Support Active Ageing**

This societal challenge includes *workplace interventions*, which encompass health promotion and disease prevention to improve employability, and *overcoming functional loss* to deliver solutions for age-related metabolic, motor and cognitive dysfunctions at home and at work, in urban and rural environments, and in healthcare settings.

Related to this challenge, 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. Moreover, 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 due to an enhanced use of human resources and the reduction of accidents.

▪ **Societal Challenge 3. Improve Healthcare**

This societal challenge includes improving healthcare systems to establish a holistic continuum of care solution in home and clinical settings, and the development of methods, solutions and concepts for improved treatment and management of chronic diseases.

Related to this challenge, 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.

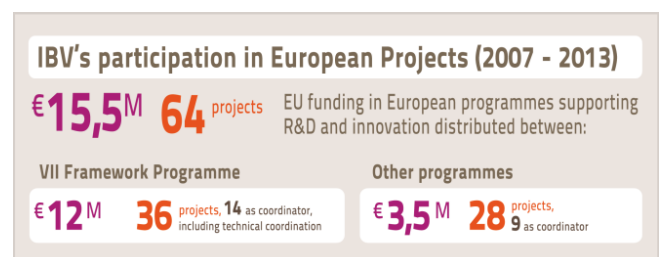
As a Research Organisation, IBV can take part in the **knowledge triangle** of the new KIC and can participate in many research and innovation activities addressed to promote healthy living, support active ageing and improve healthcare thanks to the Institute's wide and interdisciplinary approach. The following table shows how IBV's activity sectors are strongly related to the three societal challenges of EIT Health:

IBV's activity sectors	SC1. Promote Healthy Living	SC2. Support Active Ageing	SC3. Improve Healthcare
Automobile and public transportation	✓	✓	
Sport	✓	✓	
Habitat	✓	✓	✓
Clothing	✓	✓	✓
Children and childcare	✓		✓
Older people and ageing	✓	✓	✓
Rehabilitation and personal autonomy		✓	✓
Occupational health and safety	✓	✓	✓
Healthcare technology		✓	✓
Tourism and leisure	✓	✓	

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. The total EU funding obtained by IBV was **€ 15.5 million**.

Further information on IBV's activities can be found in:

- **Corporate video of IBV:** <http://youtu.be/ty09T67ee2c>
- **Annual of Biomechanics 2014:** <http://ibv.org/anuario2014>



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