



## IPCA — Intelligent Physiological Navigation and Control of web-based Applications

IPCA is a project co-financed by the Information Society Technologies Programme of the **European Commission** (IST-2001-37370; Key Action 1, Action Line IST2002-1.2.1 «Systems for independent living»).

The IPCA project aims to develop a new intelligent interaction mechanism that will enable people with severe motor and speech disabilities to control standard, and especially web-based, applications. The system will be based on a flexible combination of existing non-invasive sensors and encoders able to control different physiological parameters, and a set of software tools that will allow the user to interact with existing computer applications. IPCA will facilitate user interaction with different Internet applications and services.

IPCA has two components:

- **Multi-channel Monitoring System (MMS)**, based on non-invasive sensors able to control several physiological parameters from the user such as: EMG, EDR, accelerometers, RR/RA, etc.
- **Ambient Navigation Toolkit (ANT)** that will interface between the MMS and some standard software applications, by providing keyboard and/or mouse emulation functions. Its components are:
  - ✓ Smart Web Browser that will facilitate user interaction with Internet services
  - ✓ Training system
  - ✓ Personal profile manager
  - ✓ On-screen keyboard with scanning and word prediction capabilities
  - ✓ Emotional Response Monitoring System

### Contact:

Dr. Carlos A Velasco

Fraunhofer Institute for Applied Information Technology

Schloss Birlinghoven,  
D53757 Sankt Augustin  
(Germany)

Tel: +49-2241-142609

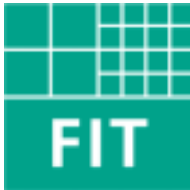
Fax: +49-2241-142065

[velasco@fit.fraunhofer.de](mailto:velasco@fit.fraunhofer.de)

<http://www.ipca.info/>

The main **target user group** for the IPCA project is people with severe physical and/or speech impairments.

## Project Partners



### Fraunhofer Institute for Applied Information Technology (FIT)

FIT is an institute of the Fraunhofer Society for the Advancement of Applied Research, which is Europe's leading organization for applied research. FIT works to enhance human abilities through flexible, context-adaptive information and cooperation systems. Its Competence Center Barrier-Free Information and Communication Technologies (BIKA) leads the project.

<http://www.fit.fraunhofer.de/>



### Mind Media B.V.

Mind Media is one of the leading companies in the market of biofeedback. Since 1992, it has developed several software and hardware products for multi-channel monitoring of EMG, EEG, skin conductance, etc. Systems developed by Mind Media are in use worldwide by thousands of end-users, clinics and universities.

<http://www.mindmedia.nl/>



### Asociación Instituto de Biomecánica de Valencia (IBV)

IBV is a research centre jointly sponsored by the Institute for Medium and Small Industries of Valencia and the Polytechnic University of Valencia. The fields of activity of the IBV are medical, sports and occupational biomechanics. In the medical field there is a Technical Aids Section that works with manufacturers, professionals and distributors in the mentioned sector on product testing, design and development. IBV has a quality certification ISO-9002 for biomechanical testing in the field of technical aids for disabled people, surgical implants and other products interacting mechanically with the human body. <http://www.ibv.org/>



### ISdAC International Association (ISdAC)

ISdAC (Information Society disAbilities Challenge) International Association is a non-profit International Association established since 1998 under the Belgian law. ISdAC includes members, which are citizens of several countries across Europe and extensively use ICT to interact with each other. The member's experience from previous involvement in R&D European projects will act as a user test-bed to assess the overall accessibility of IPCA.

<http://www.isdac.org/>