

**annual
report
2010**

cooper
ing schools
scientific missions
strategic workshops
human potential

The year in review



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This Annual Report highlights the achievements of the Actions that ended in 2010. The impact of each of these Actions is of the most diverse nature and will become visible at different points in the future. But what is more important, each and every Action has created a community with cohesive research activities leading to unexpected novel ideas and common wisdom

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I am happy to present the Annual Report 2010, my first since I was elected President of the COST Committee of Senior Officials (CSO) in spring 2010 in Riga.

In 2010 COST's added value and role as an active player in the European Research Area was reaffirmed during the dedicated Ministerial Conference which took place under the EU Spanish Presidency in Mallorca.

Since 1971 COST has connected over 30 000 researchers in Europe and beyond through networks in all fields of Science and Technology.

Indeed, COST allows free and open thinking, builds on knowledge sharing that will develop into smart, sustainable and inclusive societies of tomorrow. COST also paves the way for identifying and tackling emerging risks through ground breaking research approaches leading to new concepts and outputs.

This Annual Report highlights the achievements of the Actions which ended in 2010. The impact of each of these Actions is of the most diverse nature and will become visible at different points in the future. But what is more important, each and every Action has created a community with cohesive research activities leading to unexpected novel ideas and common wisdom.

In 2011 COST celebrates its 40th anniversary and has decided to make use of this opportunity by taking a great leap forward; to streamline its procedures and implement the results of its activities more rapidly. Our objective is to place COST in the spotlight in order to expose the full potential of the framework's achievements and contributions.

Dr Ángeles Rodríguez-Peña

President of the COST Committee of Senior Officials

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Information and Communication Technologies (ICT)

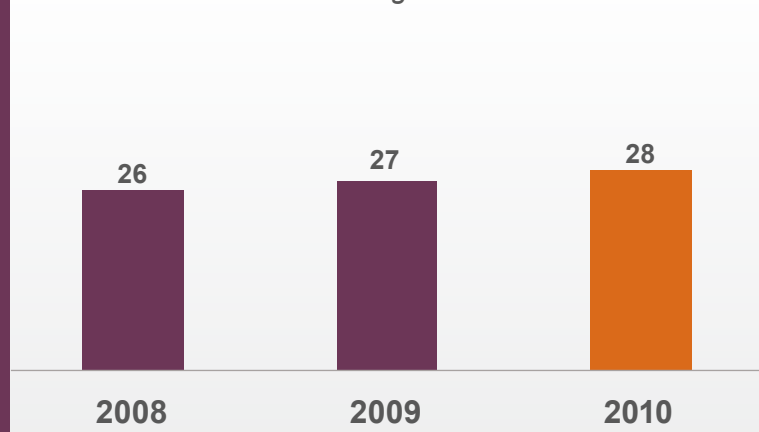
The ICT Domain covers scientific and technical research in all areas of information and communication science and technologies. The ICT research area is best summarised as treating the processing, transmission, storage, retrieval, management, usage, and exchange of information and knowledge, with emphasis on fundamental aspects and pre-competitive technology development.

Domain website:
<http://www.cost.eu/ict>

Domain Committee Chair:
 Prof. Soulla Louca

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ICT running Actions



Cross-Modal Analysis of Verbal and Non-verbal Communication

COST Action 2102

Emotional speech as well as facial expressions, gestures and gaze constitute the main form of non-verbal information that can be captured and analysed in a multisensory environment.

Human interaction happens via two channels. One conveys messages with a specific semantic content (verbal channel), while the other (non-verbal) conveys information related to both the image content of a message and to the general feeling and emotional state of the speaker. Fully understanding human face-to-face communication is needed in order to develop human-like interfaces allowing for friendly and intuitive human-machine interaction.

This Action aimed at developing an advanced acoustical, perceptual and psychological analysis of verbal and non-verbal communication signals originating in face-to-face interaction, with the ultimate goal of identifying algorithms and automatic procedures capable of recognizing human emotional states. The Action successfully:

- demonstrated the importance of multimodality (e.g. body-to-body communication) for the communication of emotional and social behaviour;
- demonstrated the importance of context for the communication of emotional and social behaviour;
- produced concrete examples of models and methods capable of analysing and simulating emotional and social behaviours;
- developed a clear and shared research agenda for human-machine interaction, evolving from pure interaction analysis to the study of cognitive and contextual aspects. This clearly reflected the state-of-the-art in research on affective computing, cognitive science, human-computer interaction, as well as in applications involving



humans (e.g. health, rehabilitation, learning and gaming);

- created a large and highly interdisciplinary network of experts spanning the social sciences and engineering (computer science, robotics, signal processing, psychology, sociology, linguistic, neuro-psychology);
- contributed significantly to reducing the fragmentation of research efforts in Europe and to the creation of a long-lasting community on cross-modal analysis of human communication.

The work carried out within the Action is instrumental for the development of technologies - such as emotional avatars, robots and cognitive aids - that will be central to coping with the societal challenges of the future (e.g. aging).

Publication 1:

Verbal and Nonverbal Features of Human-Human and Human-Machine Interaction

Publication 2:

Multimodal Signals: cognitive and Algorithmic Issues

Chair of the Action: Prof. Anna Esposito (IT)

Vice Chair of the Action: Dr Amir Hussain (UK)

Duration of the Action: 2006 – 2010

Parties: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Serbia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom (Total 28) Non-COST institution participation from the Ain Shams University, Faculty of Engineering (EG) and the College of Computer and Information Sciences, King Saud University (SA).

Action website: <http://cost2102.cs.stir.ac.uk/> and <http://www.cost.eu/ict/Actions/2102>

