Notícies de l'Oficina de Projectes Europeus de Recerca de la Universitat de València

EURORECERCA Núm. 164   Data: 3 de juny de 2009
Consulta: Tecnologies Futures i Emergents

Cara a la propera convocatòria 5 de TIC del 7PM europeu, que es publicarà previsiblement el 31 de juliol, així com la convocatòria 6 (novembre 2009), des del CDTI ens demanen si a la nostra universitat hi ha algú investigador o grup treballant les següents línies de recerca, incloses dins l'apartat "Future and Emerging Technologies" del programa de treball d'ICT:

8.4. Human Computer Confluence

new possibilities emerging at the confluence between the human and technological realms. On-line perception and interaction with massive amounts of data, new methods for "interfacing" with human senses so that large amounts of data can be communicated and understood.

8.5. Self-Awareness in Autonomic Systems

to create computing and communication systems that are able to optimize overall performance and resource usage in response to changing conditions, adapting to both context (such as user behaviour) and internal changes (such as topology). Awareness relating to higher and even global levels. Reconsider fixing abstraction layers at design time.

8.6. Towards Zero-Power ICT

New disruptive directions for energy-harvesting technologies at the nanometre and molecular scale, and their integration with low-power ICT into autonomous nano-scale devices for sensing, processing, actuating and communication.

- **Foundations of Energy Harvesting at the nano-scale**: Demonstration of radically new strategies for energy harvesting and local storage below the micrometer scale. Exploration and harnessing of potential energy sources at that scale including kinetic energy present in the form of random fluctuations, ambient electromagnetic radiation, chemical energy and others. Research may also address bio-mimicked energy collection and storage systems.
- **Self-powered autonomous nano-scale electronic devices:** Autonomous nano scale electronic devices that harvest energy from the environment, possibly combining multiple sources, and store it locally. These systems would co-ordinate low-power sensing, processing, actuation, communication and energy provision into autonomous wireless nanosystems.

8.7. Molecular Scale Devices and Systems

The research addresses devices to represent, store, process and exchange information at the atomic and molecular scale, as a basis for fully functional ICT devices and systems. Investigation, development and demonstration of **physical implementations,** both at the single-molecule level and with small assemblies of concatenated, interconnected molecules, with the aim of achieving proofs of concept and demonstrating working devices or systems such as molecular computation, single molecular memories, molecule-based sensors, and scalable, functional arrays of molecules. Exploration, design and development of **supporting technologies for molecular-scale information devices and systems** such as: a) **Measurement**

and control systems and b) Simulation and modeling tools, including hierarchical modeling (from *ab-initio* and single device to system level). Exploration and demonstration of **radically new characteristics and functionality** of molecular-scale systems by investigating new non-charge based information processing techniques, devices, architectures, self-assembly, programming, supported by experimental implementations.

8.8. Brain Inspired ICT

Recent advances in ICT and neuroscience enable a significant part of the human brain to be studied and modeled *in-silico*. This objective seeks to exploit such advances in order to better understand how the brain processes information and/or how it communicates with the peripheral nervous system (PNS), and to explore potential applications of this.

a) **Development of multi-scale models of information processing and communication in the brain and/or PNS**. Systemic study of the brain, combining recordings/imaging of brain activity on several spatial and/or temporal scales simultaneously. This research may also address higher-level cognitive processes. This multi-disciplinary research should foster joint progress and synergy in ICT and the bio- and neuro-sciences.

b) **Synthetic Hardware Implementations of Neural Circuits** that mimic information pro cessing in the brain or PNS. These implementations should demonstrate either the emulation of significant functionality of a neural system (including a comparison with the biological counterpart) or the performance of other specified processing tasks.

A aquest enllaç de l'apartat "ponències" del nostre web, podeu descarregar-vos les ponències del personal de la Comissió Europea que amplien la informació dels temes descrits abans.

Us agrairíem respunguéreu a aquest correu en cas de que el vostre grup o laboratori treballés algunes de les línies de recerca en qüestió.

Gràcies de bestreta per la vostra col·laboració.

……………………………………………………………
Oficina de Projectes Europeus de Recerca
Universitat de València
Campus de Blasco Ibáñez
Av. Menéndez y Pelayo, 3-5, planta primera
46010 València
Tel. 96-3983621
http://www.uv.es/operuv
operuv@uv.es
……………………………………………………………
Aquest missatge ha estat distribuït a la llista EUROTIC. Per a subscriure-s'hi, envieu un missatge a l'adreça listserv@listserv.uv.es amb el següent text: subscribe EUROTIC Nom Cognoms. Per a cancel·lar la subscripció, envieu un missatge a l'adreça listserv@listserv.uv.es amb el text: signoff EUROTIC.