



PROPOSERS' DAY

26-27 September 2012 - Warsaw



European
Commission

FET – Future and Emerging Technologies

Objective ICT-2013.9.6 FET Proactive Evolving Living Technologies (EVLIT)

Computational and self-adapting properties of living organisms are superior to recent ICT technology in many ways. Being composed of physically and chemically embodied entities, where function is associated to physical structure, they show properties such as scalability, self-reproduction, self-construction, evolvability, selforganization, adaptability and robust-ness. Learning to build future ICT along these lines offers a promising way to address important issues such as design complexity of ICT systems, difficulty and specificity of manufacturing, energy management, etc.

The objective is to create living technologies using the principles of biological evolution that co-organize information and matter in systems of physical entities. This includes the full range of possible methodologies, such as using living technologies built up with nanomechatronics, biological information encoding principles, bioinspired artificial systems or bio-hybrid systems.

Target outcomes

- Empirical, theoretical and synthetic approaches that define the key bioinspired principles that can drive future living technologies and the environment to use them in a controlled way.
- Significant steps towards embodying these key principles and showing their usefulness in a technological context.

Expected impact

- Foundations, approaches and proofs of concept for a radically new type of living technology.
- Possible contributions beyond the area of ICT (manufacturing, chemistry, biology, agriculture).

Funding scheme: STREP, Budget: EUR 16 million

Deadline for submission: 15 January 2013 17:00

FET web page: http://cordis.europa.eu/fp7/ict/fet-proactive/evlit_en.html

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Objective ICT-2013.9.7 FET Proactive Atomic and Molecular Scale Devices and Systems (AMOL-SDS)

The research targets the physical access and greater understanding of the behaviour of a single atom or molecule, or small ensembles thereof, as elementary functional resources for future ICT systems. Aspects such as new forms of atomic scale constructs and fabrication processes, control, sensing and picometer interconnection precision of components are addressed in this objective.

Target outcomes

- Investigation, Design, and Demonstration of ICT functionality, at the atomic and molecular scale, through various physical implementations. Working components and systems relying on robust atomic scale fabrication technologies should be targeted.
- Investigation, Design, and Development of metrology and control systems at the atomic scale for molecular references or precision sensors or procedures to preserve operation integrity.
- Design and Development of simulation and hierarchical modelling tools (from ab initio to large atomic scale systems, and single device to circuit and system level), taking account time dependencies to explore the response time of the proposed architecture.
- Investigation, Design and Demonstration of the embedding and interfacing of atomic and molecular scale components with a mesoscopic technological and material environment, considering charge and non-charge transport, physical nano-connectivity and atomic-scale mechanical response.

Integrated Projects should cover at least topics a), c), and d). STREPs should cover at least two of the above topics.

Expected impact

- Opening of disruptive avenues and exploration of new possibilities for components and technologies at the atomic and molecular scale.
- Experimental demonstration of principle, tangible realization, and feasibility of such components and systems.
- New perspectives on potential applications with concrete advantages (e.g. energy consumption, data and operation integrity, clock frequency).

Funding scheme: IP & STREP, Budget: EUR 16 million

Deadline for submission: 15 January 2013 17:00

FET web page: http://cordis.europa.eu/fp7/ict/fet-proactive/amolsds_en.html

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For full legal information about the calls for proposals, consult the ICT workprogramme
<http://cordis.europa.eu/fp7/ict/docs/ict-wp2013-10-7-2013.pdf>



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Objective ICT-2013.9.8 FET Proactive Coordinating communities, identifying new research topics for FET Proactive initiatives and fostering interdisciplinary dialogue

Target outcomes

- Short duration actions (typically 6-12 Months) to organise consultations of multidisciplinary communities to formulate novel FET research topics, focussing on new emerging research areas for H2020 related to ICT and beyond. The main objective should be to identify new research avenues from a global perspective, the associated fundamental challenges, and to analyse the expected impact on science, technology and society.
- Actions supporting the coordination and cooperation of the targeted research communities, fostering the consolidation of research agendas, assessing the impact and proposing measures to increase the visibility of specific topics to the scientific community, to targeted industries and to the public at large.
- Actions supporting and promoting cooperation with non-EU research teams in foundational research on FET topics, with a balanced participation from partners in the EU and from target countries.
- Actions to organise conferences and workshops which should foster dialogue between science, policy and society on the role and challenges of interdisciplinary long-term research, increasing Europe's creativity and innovation base and bridging diverse European research communities and disciplines.

Expected impact

- Novel, widely supported research topics to be considered as inputs for future FET work programmes.
- Reinforced coordination of research projects in FET Proactive Initiatives in current or previous calls.
- Strengthened research excellence and co-operation with partners from outside Europe.
- Early identification and increased awareness of new trends emerging on a global scale in support of future proactive initiatives
- Increased visibility of the FET community and links between European research communities

Funding scheme: CSA, Budget: EUR 3 million

Deadline for submission: 15 January 2013 17:00

FET web page: http://cordis.europa.eu/fp7/ict/fet-proactive/csa_en.html

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