FET Flagship Pilots

To prepare the launch of the FET Flagships, 6 Pilot Actions are foreseen to be funded over a duration of 12 months starting from May 2011. These Coordination Actions will create a design and description of consolidated candidate FET Flagship Initiatives, including assessment of feasibility in scientific, technical and financial terms. By mid-2012 the FET Flagship Pilots will have to present a structured community in good position to implement their integrated research agenda, including the involvement and commitment from key stakeholders.

In the second half of 2012 at least two of the Pilots are expected to be chosen to be launched as full FET Flagship Initiatives in 2013.

A horizontal Coordination Action named FLEET should run from April 2011 to assist the FET Flagship Pilots in addressing common, non-competitive issues.

If would like to know more about either of the Flagship Pilots, or would like to explore the possibility of participating in them, please use the contact details provided on the Pilot webpages.

FET Flagship Pilot Summaries

FuturICT

The FuturICT Knowledge Accelerator and Crisis-Relief System: Unleashing the Power of Information for a Sustainable Future

What if global scale computing facilities were available that could analyse most of the data available in the world? What insights could scientists gain about the way society functions? What new laws of nature would be revealed? Could society discover a more sustainable way of living? Developing planetary scale computing facilities that could deliver answers to such questions is the long term goal of FuturICT. This initiative is seeking to develop Information and Communications Technologies that will provide scientists, governmental officials and citizens with a planetary scale computer which is called a *Living Earth Platform*. The *Living Earth Platform* will provide the means of analysing data and managing complex events. It could for example provide a basis for predicting natural disasters, or managing and responding to man-made disasters that cross national borders or even continents. The intention is to undertake interdisciplinary research, involving domains such as complexity, computer and the social sciences, to address the scientific challenges associated with the realisation of this goal and the needed advances in Information and Communication Technologies.
http://www.futurict.eu/

Graphene-CA
Graphene Science and technology for ICT and beyond

Graphene, a new substance from the world of atomic and molecular scale manipulation of matter, could be the wonder material of the 21st century. Discovering just how important this material will be for Information and Communication Technologies is the long term focus of the Flagship Initiative, simply called, GRAPHENE. This aims to explore revolutionary potentials, in terms of both conventional as well as radically new fields of Information and Communication Technologies applications. Bringing together multiple disciplines and addressing research across a whole range of issues, from fundamental understandings of material properties to Graphene production, the Flagship will provide the platform for establishing European scientific and technological leadership in the application of Graphene to Information and Communication Technologies. The proposed research includes coverage of electronics, spintronics, photonics, plasmonics and mechanics, all based on Graphene.
Webpage under construction

Guardian Angels
Guardian Angels for a Smarter Planet

Providing Information and Communication Technologies to assist people in all sorts of complex situations is the long term goal of the Flagship Initiative, Guardian Angels. These Guardian Angels will be like personal assistants and are envisioned as intelligent (thinking), autonomous systems (or even systems-of-systems) featuring sensing, computation, and communication, and delivering features and characteristics that go well beyond human capabilities. It is intended that these will provide assistance from infancy right through to old age. A key feature of these Guardian Angels will be their zero power requirements as they will scavenge for energy. Foreseen are individual health support tools, local monitoring of ambient conditions for dangers, and emotional applications. Research will address scientific challenges such as energy-efficient computing and communication; low-power sensing, bio-inspired energy scavenging, and zero-power human-machine interfaces.
Webpage under construction

HBP-PS
The Human Brain Project - Preparatory Study

Understanding the way the human brain works could be key to enabling a whole range of brain related or inspired developments in Information and Communication Technologies, as well as having transformational implications for neuroscience and medicine. The long term goal of the Human Brain Project is to build the informatics, modelling, and supercomputing technologies that are needed to simulate and understand the human brain. Biologically detailed simulations of the brain will make it possible, for the first time, to identify the multi-level chain of interactions leading from genes to cognition and behaviour. Also to be researched, using supercomputer-based simulation technology, are new diagnostic tools and treatments for brain disease, new interfaces to the brain, new types of low-energy technologies with brain-like intelligence, and a new generation of brain-enabled robots.
Webpage under construction

ITFoM

The Medicine of the Future: Molecular Modelling in Medicine, Aging, and Drug safety

Data-rich, individualised medicine poses unprecedented challenges for IT, in hardware, storage and communication. *ITFoM* proposes a data-driven, individualised medicine of the future, based on the molecular/physiological/anatomical data from individual patients. *ITFoM* shall make general models of human pathways, tissues, diseases and ultimately of the human as a whole. Patient individualised versions of the models will then be used to identify personalised prevention/therapy schedules and side effects of drugs. This is the first time that huge IT implications of worldwide individualized patient care will be addressed in combination with genomics and medical requirements. The project outcomes will enable calculation of health, disease, therapy and its effects for individual patients. These may revolutionize our health care with enormous (i) benefits for health (prevention, diagnosis and therapy), (ii) reduction in cost by individualising combinations of a limited number of drugs, and (iii) new commercial opportunities in IT, analytics and health care. This entails nothing less than **the transformation of biomedical science from empirical and stochastic to fact based and knowledge driven i.e. based on an ICT paradigm.**
Webpage under construction: www.itfom.eu

CA-RoboCom

Coordination Action for the Design and Description of the FET Flagship Candidate Robot Companions for Citizens

Robot Companions for Citizens are soft skinned and sentient machines designed to deliver assistance to people. This assistance is defined in the broadest possible sense and covers all sorts of different settings. Based on multidisciplinary science and engineering, CA-RoboCom aims to develop a radically new approach towards machines and how these are deployed in society. *Robot Companions for Citizens* will be based on the novel solid articulated structures with flexible properties displaying soft behaviour. These companions will also have new levels of perceptual, cognitive and emotive capabilities. They will also be aware of their physical and social surroundings and respond accordingly. Such sentient characteristics will be achieved through understandings of the behaviour of sentient living creatures. In undertaking the research into the Information and Communication technologies that will need to be developed, the research will also validate understandings of the general design principles underlying biological bodies and brains, thus supporting a symbiotic relationship between science and engineering.
www.robotcompanions.eu