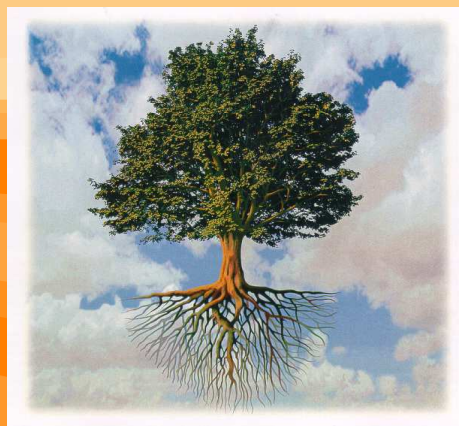


FET
in the
ICT WorkProgramme
2011-2012
Proactive Initiatives
Call 9



David Guedj, Christiane Wilzeck

FET Proactive Initiatives

WP 2011-2012

Total funding:
€ 143 M

Call FET-F FET Flagship Preparatory Actions (CSA) 10M€

Call 7

9.12 e. ERA-NET follow-up (CSA) 2,5M€

9.12 (CSA)

0,5M€

a. Coordination of Communities

b. International Cooperation

c. Identifying new FET topics

d. Organising conferences

3M€

2,5M€

Call 8

9.6 Unconventional Computing (STREP) 15M€

9.7 Dyn. of Multi-Level Complex systems (IP/Strep) 22M€
INCO dimension (CSA) 1M€

9.8 Minimising Energy Consumption of Computing to the Limit (Strep) 15M€

Call 9

9.9 Quantum ICT (IP/Strep) 15M€
including ERA-NET Plus (ERA-NET-Plus) 7M€

9.10 Fundamentals of Collective Adaptive Systems (IP/Strep) 23M€

9.11 Neuro-Bio-Inspired Systems (IP/Strep) 22M€
INCO dimension (CSA) 1M€

Instruments

Coordination Small or medium-scale focused research projects (STREP) are objective-driven research projects. They target a specific research objective in a sharply focused approach. (At least 3 partners, typically 3 years.)

Large scale integrating collaborative projects (IP) are also objective-driven research projects. They have a comprehensive 'programme' approach: including a coherent integrated set of activities dealing with a range of aspects.

Coordination and Support Actions (CSA) aim at coordinating or supporting research activities and policies. (CA = at least 3 partners, typically 3 years; SA can be one partner, typically 1 year)



FET uses special evaluation criteria – see WP!



Objective ICT-2011.9.9: Quantum ICT (QICT) including ERA- NET-Plus

The objective is to conceive theoretically and develop experimentally novel and powerful technological applications of **quantum coherence** and **entanglement**.

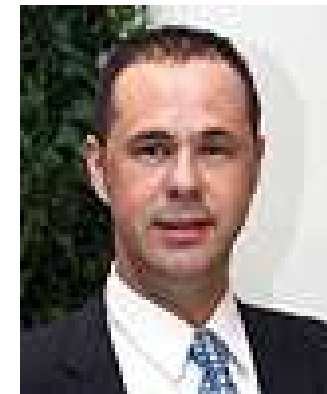
Projects should develop a conceptual platform for **potentially disruptive technologies**, advance their scope and breadth and speed up the process of bringing them from the lab to the real world.

-Funding/Instruments: 15 MEuro STREPs/IPs

7 MEuro ERA-NET Plus

- Closing of Call 9: 17 April 2012

-**Contact: David.Guedj@ec.europa.eu**



European Commission
Information Society and Media



Objective ICT-2011.9.9: Quantum ICT (QICT) including ERA- NET-Plus

Target Outcome:

The results obtained should push forward the boundaries of our knowledge and ensure a constant progress in the quantum ICT area, in particular by

- Demonstration of quantum simulators capable to operate on quantum many-particle systems and to simulate technologically relevant systems.
- Demonstration of hybrid systems linking different quantum bit realizations
- Novel quantum devices exploiting entanglement and quantum coherence as a resource
- Enabling methods and technologies to support aforementioned outcomes



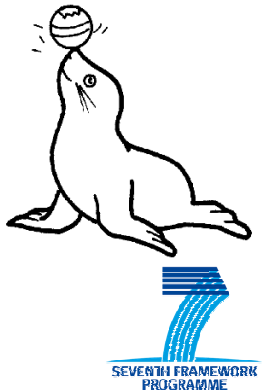
A joint call for proposals on QICT, funded through an ERA NET-Plus action



Objective ICT-2011.9.10: Fundamentals of Collective Adaptive Systems (FOCAS)

“The socio-technical fabric of our society more and more depends on ... collectives of heterogeneous ... [which] need to be able to evolve, collaborate and function as a part of an artificial society.”

- Many units/nodes; dispersed decision making
- Fluid boundaries, scales
- Units can be highly heterogeneous (*computers, robots, agents, devices, biological entities, etc*)
- Different objectives and goals



-Funding/Instruments: 23 MEuro STREPs/IPs

-Closing of Call 9: 17 April 2012

-Contact: wide.hogenhout@ec.europa.eu



Objective ICT-2011.9.10: Fundamentals of Collective Adaptive Systems (FOCAS)

Target Outcome:

The objective is to establish a foundational framework for CASs

- Operating Principles: principles by which CASs can operate. ... taking into account the diversity of objectives within the system, conflicts resolution, ...
- Design Principles: principles necessary to build and manage CASs, such as enabling the emergence ... prediction and control ...
- Evolutionary Properties: open-ended (unbounded) evolutionary systems, the trade-off and interaction between learning and evolution, ...



IPs should address all three; STREPs at least one

Objective ICT-2011.9.11: Neuro-Bio-Inspired Systems (NBIS)

“Brains are computing systems outperforming conventional artificial systems in many tasks - We are still unable to build artificial “thinking” systems comparable with even simple insect brains.”

- Funding/Instruments: 22 MEuro, STREPs & IPs
1 MEuro, CSAs
- Closing of Call 9: 17 Apr 2012
- Contact: Christiane.Wilzeck@ec.europa.eu**



Objective ICT-2011.9.11: Neuro-Bio-Inspired Systems (NBIS)

Target outcomes:

IPs / STREPs

- Should address at least two of the following:
 - a) New recording systems to understand neural processing and interfaces
 - b) Theories of neural representation
 - c) Development / prototyping modular brain-like computing architectures



Objective ICT-2011.9.11: Neuro-Bio-Inspired Systems (NBIS)

Target outcomes:

CSAs

- World-class global research cooperation and alliances in this area, links with similar actions outside Europe, i.e. from USA and Japan
- Activities can include conferences, summer schools, workshops, but NOT research projects



Objective 9.12

Coordinating Communities, Identifying new research topics for FET
Proactive initiatives and Fostering Networking of National and
Regional Research Programmes

Funding/Instruments: 2.5 M€, CSAs

Target outcomes a) to d) only

Closing of Call 9: 17 Apr 2012

Contact: jean-marie.auger@ec.europa.eu



Objective 9.12 ...

(a) Actions supporting coordination and cooperation

- targeted research communities
 - Coordination and cooperation
 - Increase visibility and collective impact to the scientific community, industry & public
 - Consolidation of research agendas
 - ❖ Foster links between national, regional or international research projects
 - ❖ Encouraging establishment of new educational curricula
 - ❖ International Cooperation
 - ❖ Organise events



(Coordination Actions)

Research communities can be linked to existing FET Proactive Initiatives **OR** communities that are new to FET.

Objective 9.12 ...

(b) Actions supporting and promoting cooperation with non-EU research teams

- Balanced participation of EU and of target countries
- Stimulate global collaborations with best teams worldwide
- Can be “twinning project”
- Complementing continuous call for INCO-top up, and specific CAs in DYM-CS and NBIS

(Coordination Actions)

Research communities can be linked to existing FET Proactive Initiatives **OR** communities that are new to FET.

Objective 9.12 ...



(c) Short duration actions to organise consultations of multi-disciplinary communities

- Formulating new FET topics
- Focus on new emerging research areas (Support Actions)
- Identify new research avenue and associated fundamental challenge
- Analyse expected impact on science, technology and society

(d) Actions to organise conferences and workshops (Coordination Actions)

- role of interdisciplinary ICT related long term research
- dialogue between science, policy and society
- Increase Europe's creativity and innovation base
- Bridge diverse European research communities and disciplines

FET
in the
ICT WorkProgramme
2011-2012
FET Open

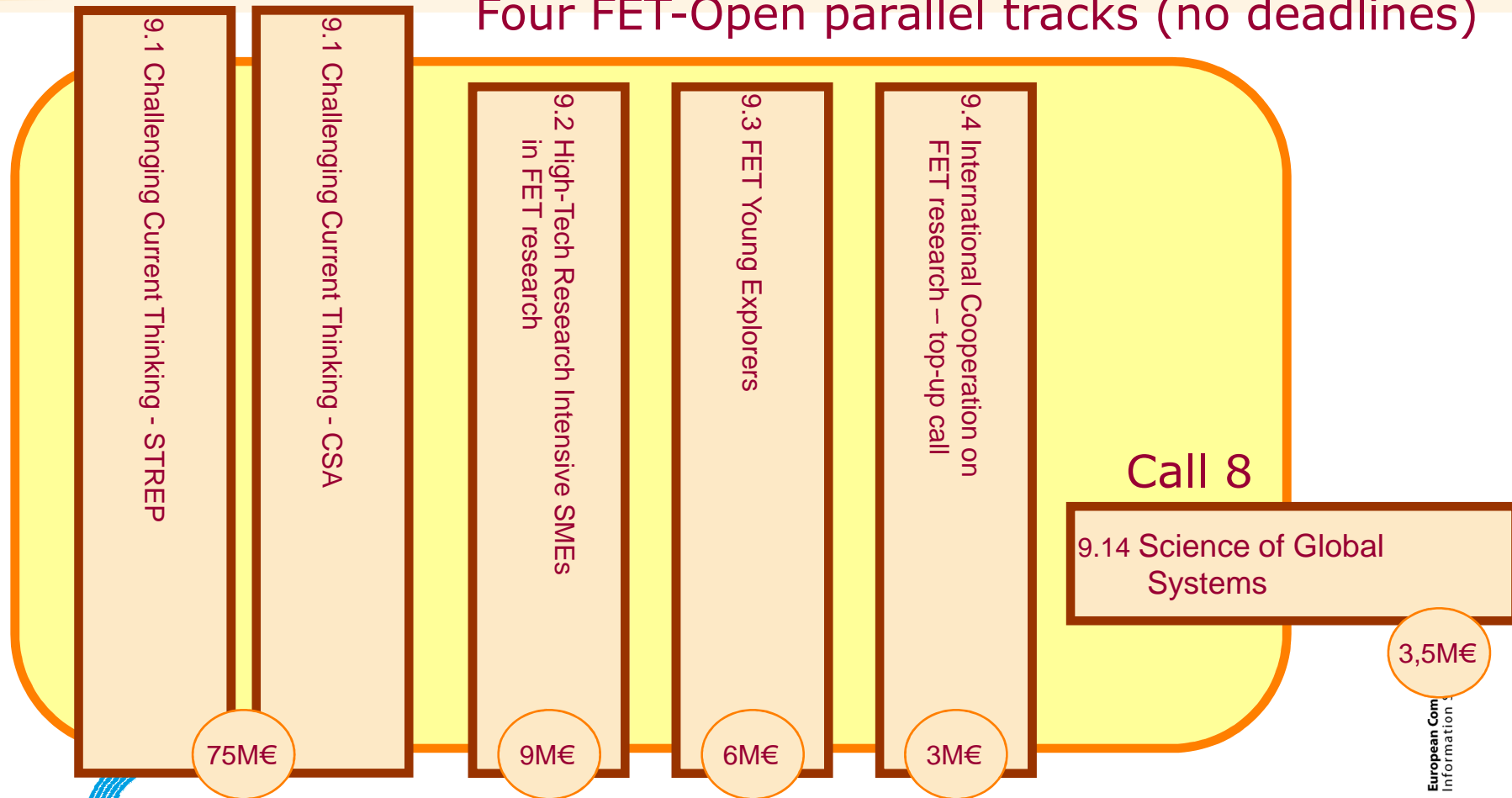


“Incubator for radically new research ideas
and future research and innovation potential”

FET Open – WP 2011-2012

Incubator for radically new research ideas
and future research and innovation potential

Four FET-Open parallel tracks (no deadlines)



FET-Open

ICT-2011.9.1: Challenging current thinking - STREPs

What are we looking for ?

- Exploration of new and alternative ideas that, because of their risky or non-conventional nature, would not be supported elsewhere in the ICT WP. It seeks:
 - foundational breakthroughs
 - as crucial steps towards radically new forms and uses of information and information technologies within a clear long-term vision that is far beyond the state of the art
 - ambitious proof-of-concept
 - and its supporting scientific foundation, where novelty comes from new, high-risk ideas rather than from the refinement of current ICT approaches
 - new inter-disciplinary collaborations
 - possibly with prominent and internationally recognised non-EU research teams where these can provide a significant added value
- 75 M€ for STREP (& CSA)
- 2-step submission and evaluation scheme
- proposals continuously receivable (at least) until 11 Sept 2012

FET-Open

ICT-2011.9.1: Challenging current thinking - CSAs

What are we looking for ?

- CSAs for creating the best conditions within which FET research can flourish and achieve transformative impacts that it aspires to. These activities may be, for example:
 - actions, including networking and dissemination activities, aiming at the **emergence of new research communities and collaborations** involving a broad diversity of disciplines and actors into FET research
 - actions towards the increased involvement **high-tech research intensive SMEs**
 - actions that stimulate excellence and future leadership of **pioneering teams of Young Researchers**
 - actions aiming to strengthen the **international dimension of FET**
- Up to 7.5 M€ for CSA
- 1-step submission and evaluation scheme
- proposals continuously receivable until 12 March 2013

FET-Open

ICT-2011.9.2: High-tech research-intensive SMEs in FET research

What are we looking for ?

- High-tech research intensive SMEs ready to take a driving role in collaborative FET projects, by setting and co-executing the ambitious FET research agenda centred on their needs
- link novel science with marketable ideas that can lead to new visionary business opportunities and create future markets;
- generate a new scientific and technological asset for SMEs to establish themselves firmly as future innovation players
- increased visibility, exposure and impact of FET projects by fostering the rapid maturing of breakthrough technologies
- Funding: 9M€
- Target: 'Small' STREP proposals, grant in the order of 1 M€*
- Eligibility: Consortium must contain a High Tech Research Intensive SME
- Submission: 2-step submission/evaluation process; short proposals receivable continuously from 4 August 2010 until 11 September 2012



(*) the largest share of the resources is to be allocated to the participating SMEs



FET-Open ICT-2011.9.3: FET Young Explorers

What are we looking for ?

- Captures the creative potential of young researchers in FET type of research
- Fosters their leadership and participation: put them in the driver seat of FET-like collaborative research projects
- Empowers the next generation of European independent research leaders
- Promotes early independence of high-potential young researchers
- Funding: 6M€
- Target: 'Small' STREP proposals; grant in the order of 1 M€
- Eligibility: Project and all Workpackages must be led by Young Researchers*
- Submission: 2-step submission/evaluation process; short proposals receivable continuously from 4 August 2010 until 11 September 2012



(*) Young researcher is defined as up to PhD + 6 years (or equivalent) at proposal submission date





ICT-2011.9.4: : International cooperation on FET research

“Top-up call”



“Top-up call”

ICT-2011.9.4: : International cooperation on FET research

What are we looking for ?

- Extension of ongoing FET projects with complementary research activities, in which collaboration with **new non-EU** research partners of excellent global standing brings significant added value

Who ?

- Restricted to on-going IP & STREP FET projects
- ending at least 18 months **after** the submission date of the proposal.
- Top-up funding for partners from the ongoing FET project and for the new non-EU research participants to cover the coordination and joint research activities



“Top-up call”

ICT-2011.9.4: : International cooperation on FET research

How ?

- 1-step submission of an extension proposal (no short)
- 1 cut-off date in 2012 :
- 10/04/2012 -> Extension to start end 2012
- Per batch
- ~1M€ in total
- ~4 to 6 projects
- Continuously open call
- Expected to be extended up to 12 March 2013

ICT-2011.9.14: Science of global systems (in call 8)

What is the objective ?

- Better understand the interactions between ecological and socio-economic systems and improve their ability to respond to global environmental changes
 - Research on global systems dynamics and models
 - IT tools to better link science, policy and society
 - Use of systems models to support global multi-national decision making
- Total EU budget: 3.5 M€, STREP
- Deadline for submission

17 January 2012, 17:00 Brussels time

ICT-2011.9.14: Science of global systems (in call 8)

Expected impact

- Better links between modellers and stakeholders facilitated by new policy-relevant concepts in modelling of global systems;
- Overcome fragmentation in research in various policy-relevant models resulting in a better uptake of modelling results for global coordination of policies;
- Policy uptake in targeted areas: socio-ecological system and climate change impacts, innovation as a global system, dynamics of the financial system and new models for economy.

FET-Open contacts per objective

Objective 9.1: Challenging current thinking

Pascal Drabik (pascal.drabik@ec.europa.eu)

Objective 9.2: High-Tech Research Intensive SMEs in FET research

Walter Van de Velde (walter.van-de-velde@ec.europa.eu)

Objective 9.3: FET Young Explorers

Prabhat Agarwal (prabhat.agarwal@ec.europa.eu)

Objective 9.4 : International Cooperation on FET research – top-up call

Aymard de Touzalin (aymard.de-touzalin@ec.europa.eu)

Objective 9.14 : Science of Global Systems

Ralph Dum (ralph.dum@ec.europa.eu)

FET-Open Head of Unit:

Ales Fiala (ales.fiala@ec.europa.eu)

FET-Open website (objectives, project portfolio, FAQ and much more)

<http://cordis.europa.eu/fet-open>

Further Information

- FET Proactive
http://cordis.europa.eu/fp7/ict/fet-proactive/home_en.html
- FET OPEN
http://cordis.europa.eu/fp7/ict/fet-open/home_en.html
- or google «FET ICT»



Thank you for your attention!