



FET  
in the

# ICT Work Programme 2011-2012 *Proactive Initiatives* **Call 8**



## **Minimising Energy Consumption of Computing to the Limit MINECC**





# FET Objectives

## Supporting the emergence of visionary ICT research

- Pathfinder and Incubator for exploring new **visionary** ideas
- Focusing on long term **foundational** research
- Focusing on **high risk**/high pay-off multi- and inter- disciplinary research aiming at S&T breakthroughs
- Maturing & **structuring emerging** research fields, research **communities** and research practices





# Future and Emerging Technologies

## A well established successful ICT scheme

Two complementary inter-linked schemes  
FET Proactive + FET Open

### FET Proactive

- Top-down approach
- Set of novel pre-defined themes

€ 143 M(\*)



### FET Open

- Bottom-up approach
- Open to any research idea

€ 93 M



# FP7 Proactive Initiatives

## WP2007-2008

### Components



**Pervasive  
Adaptation**

**Nanoscale  
ICT Devices  
& Systems**

### Systems



**ICT  
Forever Yours**

**Bio-ICT  
Convergence**

**Embodied  
Intelligence**

**Complex Systems  
for Socially  
Intelligent ICT**

### Intelligence



**Total funding:  
€ 120 M**

Call 1

Call 3





# FP7 Proactive Initiatives

## WP2009-2010

**Quantum Technologies**

**Concurrent Tera Computing**



**Molecular Scale Devices & Systems**

**Self-Awareness in Autonomic Systems**

**Components**

**Bio-chemistry based ICT**

**Systems**

**Zero-Power ICT**

Call 4

Call 5

Call 6

**Human-Computer Confluence**



**Intelligence**

**Brain-Inspired ICT**

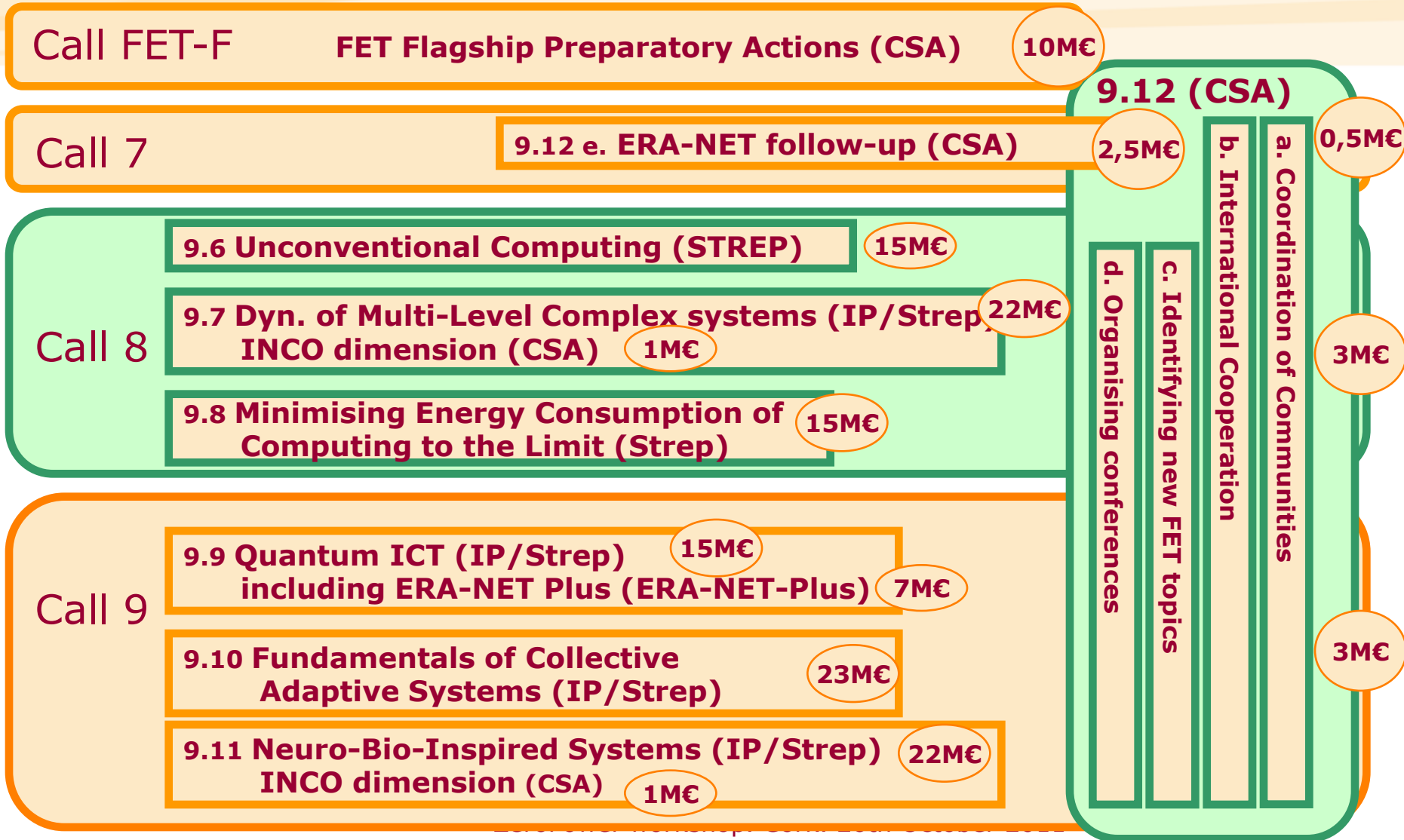
**Total funding:  
€ 110 M**





Total funding:  
€ 143 M

# FET Proactive Initiatives WP 2011-2012





# Objective ICT-2011.9.8: Minimising Energy Consumption of Computing to the Limit (MINECC)

**“Energy efficiency of state-of-the-art ICT is orders  
of magnitude above the theoretical limits!**

**-So-**

**Closing this gap will offer a bouquet of new  
opportunities!”**

- Funding/Instruments: 15 MEuro STREPs
- Closing of Call 8: 17 Jan 2012
- Contact:** [francisco.ibanez@ec.europa.eu](mailto:francisco.ibanez@ec.europa.eu)





# Objective ICT-2011.9.8: Minimising Energy Consumption of Computing to the Limit

## Target Outcome:

Foundations for radically new ICT technologies striving for the theoretical limits in energy consumption

- a. New elementary devices and inter-device-communication mechanisms
- b. Novel computing paradigms with radically improved energy efficiency (e.g. inspired by biology, post-Boolean logics, ...)
- c. Software models and programming methodologies supporting the strive for the energetic limit (e. g. energy cost awareness,..)

Proof of concept, indication of expected energy gain, appropriate energy metrics or benchmarks for verification





# FET Prospects for 2013

## Timetable for Work-programme 2013

- Oct. 2011 – Feb 2012: Consultation
- July 2012: Adoption of WP 2013
- July-August 2012: Call 10 publication (tbc)
- January 2013: Call 10 closing (tbc)
- Jan. - April 2013: Call 11 publ. – closing (tbc)





# FET Flagship Initiatives

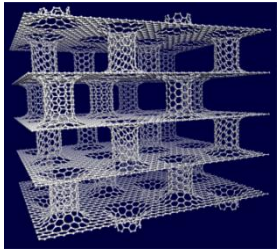
## Main features

- **science-driven**
- target a **unifying goal** (visionary and highly ambitious)
- require **multidisciplinary** collaboration
- are nucleated from ICT future and emerging technologies and going **beyond** the ICT programme.
- are envisioned to be **long term** programmes
- on a **scale** beyond FET Proactive Initiatives.
- they can only be realised through a **federated effort of key stakeholders**



# Flagship Pilots retained

topics/themes beyond ICT



## Graphene

NMP

(ICT: Nanoelectronics)

Environment & Climate, Science and Society,  
Energy, Research Infrastructures

## FuturICT

(ICT: e-Gov)



## Guardian Angels

NMP, Energy, Environment, Health, Research Infrastructures  
(ICT: AAL, Nanoelectronics, Microsystems, ICT for Sustainable  
Growth, e-Health, e-Gov)



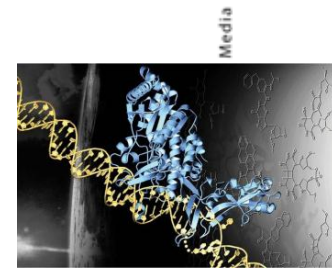
## Human Brain Project

Health, Research Infrastructures

(ICT: e-Health, Robotics)

Health, Research Infrastructures

ITFoM  
(ICT: e-Health)



## RoboCom

NMP

(ICT: Robotics)

Health, Research Infrastructures





# Conclusions

- FET promotes high-risk long-term research
- FET seeks novelty from multidisciplinary science
- FET great transformation potential: FET transforms mainstream industrial research agendas, approaches to problems, research topics and communities
- Importance of MINECC within the FET programme



# Thanks for your attention!

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