FP7 ICT Work Programme

Calls for Proposals in 2007
Focus on Call 2 and Call 3

Kostas Glinos
Head of Unit, Embedded Systems and Control
European Commission
Presentation outline

- Introduction to FP7
- ICT Work Programme 2007 - Challenges
  - What’s at stake and what can we build on
  - What are the targets
- ICT Calls for Proposal in 2007
  - Objectives and implementation details
  - Focus on Call 2 and Call 3
The renewed Lisbon strategy

**Markets & Competition: Europe - A more attractive place to invest & work**
- The internal market
- Improve regulation
- Competitive markets
- Expand & improve infrastructure

**Knowledge & innovation for growth**
- Increase R&D investment
- Facilitate innovation & uptake of ICT & the sustainable use of resources
- Contribute to a strong industrial base

**Employment & Skills: Creating more & better jobs**
- Employment & social protection systems
- Flexibility of labour markets
- Human capital: Better education & skills
Research policy

- Raise R&D investment (3% objective)
- Create a single “market” for research (ERA) and innovation
  - An area of free movement of knowledge, researchers & technology
- R&D excellence
- Improve human capital & skills base
- Build effective research infrastructures
- Aligning Framework Programme (FP) & national R&D programmes
FP7 Specific Programmes
2007 - 2013

“Cooperation”
Collaborative R&D, pre-defined themes, JTIs

“Ideas”
Frontier research, competition, individual grants

“People”
Human potential, mobility

“Capacities”
Infrastructure, SMEs, science and society

Joint Research Centre (non-nuclear)

EURATOM
EURATOM Programme

Total
€ 54.6 bn
2007-2013

€ 32.3 bn
€ 7.5 bn
€ 4.7 bn
€ 4.3 bn
€ 1.8 bn
€ 2.8 bn
€ 1.3 bn

65%
15%
9%
8%
FP7 “Cooperation”: Themes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Budget [mn €]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Health</td>
<td>6,000</td>
</tr>
<tr>
<td>2. Food, Agriculture &amp; Biotechnology</td>
<td>1,935</td>
</tr>
<tr>
<td>3. Information &amp; Communication Technologies</td>
<td>9,120</td>
</tr>
<tr>
<td>4. Nanosciences, Nanotechnologies, Materials &amp; new Production Technologies</td>
<td>3,505</td>
</tr>
<tr>
<td>5. Energy</td>
<td>2,300</td>
</tr>
<tr>
<td>6. Environment (including Climate Change)</td>
<td>1,900</td>
</tr>
<tr>
<td>7. Transport (including Aeronautics)</td>
<td>4,195</td>
</tr>
<tr>
<td>8. Socio-Economic Sciences &amp; the Humanities</td>
<td>610</td>
</tr>
<tr>
<td>9. Space</td>
<td>1,430</td>
</tr>
<tr>
<td>10. Security</td>
<td>1,320</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32,315</strong></td>
</tr>
</tbody>
</table>

... including

- Joint Technology Initiatives
- ERA-Nets
- International Co-operation
JTIs in FP7: what they are

• Long term public-private partnerships
  - In a very limited number of cases
  - Resulting from the work of ETPs
  - Covering one or a small number of selected aspects of R&D
  - Combine private with European and national funding
  - Legal basis: Article 171 of the Treaty

• Criteria
  - Inability of existing instruments to achieve objectives
  - Impact on industrial competitiveness
  - Strength of commitment from industry
  - Capacity to attract additional national support and leverage industry funding
  - ...
Indicative list of JTIs in FP7

- Innovative Medicines Initiative (IMI)
- Nanoelectronics Technologies 2020 (ENIAC)
- Embedded Computing Systems (ARTEMIS)
- Aeronautics and Air Transport (“Clean Sky”)
- Hydrogen and Fuel Cells Initiative
- GMES
FP7 Cooperation Programme

- Socio-economic sciences and the humanities
- Space
- Security
- Health
- Food, agriculture, biotechnology
- Nanosciences, nanotechnologies, materials, production technologies
- ICT - Information and Communication Technologies
- Energy
- Transport
- Environment

9.1 B€ (2007-13)
ICT: Setting priorities

- In line with
  - EU’s i2010 policy for ICT
  - the scope of FP7 Framework and Specific Programmes

- Responding to
  - orientations from Programme Advisory Panel
  - opinions from Programme Management Committee
  - Strategic Research agendas from European Technology Platforms
  - 100+ thematic consultation meetings
Work Programme approach and structure

- A limited set of *Challenges* (areas) that
  - respond to well-identified industry and technology needs and/or
  - target specific socio-economic goals

- A *Challenge* is addressed through a limited set of *Objectives* that form the basis of Calls for Proposals

- An *Objective* (topic) is described in terms of
  - target outcome
  - expected impact on industrial competitiveness, societal goals,...
  - applicable funding schemes

- A total of 25 *Objectives* expressed within 7 *Challenges*
<table>
<thead>
<tr>
<th>Socio-economic goals</th>
<th>4. Digital libraries and content</th>
<th>5. ICT for health</th>
<th>6. ICT for mobility &amp; sustainable growth</th>
<th>7. ICT for independent living and inclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Network and service infrastructures</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Cognitive systems, interaction, robotics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Components, systems, engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Challenge 1: Pervasive and trusted network & service infrastructures

- Network and service infrastructures underpin economic progress and the development of our societies
  - 2 billion mobile terminals in commercial operation, 1 billion Internet users, 400 million internet enabled devices

- A growing and changing demand
  - for increasing user control of content/services
  - for networking ‘things’ - TV/PC/phone/sensors/tags ...
  - for convergence: networks|devices|services - video/audio/data/voice/.

- Current technologies can be, and need to be improved significantly
  - for scaling up and more flexibility
  - for better security, dependability and robustness
  - for higher performance and more functionality

- Europe is well-positioned: industry, technology and use
  - networks equipment and services, business software, middleware, security, home systems ...
### Challenge 1 targets

<table>
<thead>
<tr>
<th>Today</th>
<th>5 – 10 years</th>
</tr>
</thead>
</table>
| • “Convergence” emerging but:  
  • user handles separate networks  
  • a multiplicity of devices  
  • disparate services  
  • Billions of devices connected  
  • Security and trust are “added on”  
  • Robustness/dependability a key hurdle  
  • Difficulty to cope with the fragmentation of the value chain | • Anywhere, anytime, any device  
  • seamless, ubiquitous  
  • broadband, mobile  
  • reconfigurable to load/use/context  
  • Trillions of devices connected  
  • “Built-in” security and trust  
  • Highly dependable software and systems  
  • Full support to distributed value chains and to the networked enterprise |
Challenge 1: Objectives in ICT Call 2 + Joint ICT/Security Call

1.6: New Paradigms and Experimental Facilities (ICT Call 2) – 40 M€
- Advanced networking approaches to architectures and protocols \textit{coupled with validation in large-scale testing environments} ...
- Interconnected test beds \textit{addressing networks, services, software, security} ...

1.7: Critical Infrastructure Protection – 40 M€ (Joint Call between ICT and Security Themes)
- Technology building blocks for creating, monitoring and managing secure, resilient and always available information infrastructures ...
- \textit{that link critical transport and energy infrastructures} ...
• Today’s ICT systems cannot learn from experience and reason, cannot contextualise and adapt, and cannot (inter)act based on observation and learning
  – many ICT applications cannot be developed further if there are no new breakthroughs in machine intelligence and systems engineering ...

• Overcoming such technology roadblocks opens the doors to a wide range of opportunities in new application fields
  – vision/sensing systems, service robots, health robots, industrial robots, multimodal and multilingual interactions ...

• Europe has key assets to build on
  – world leadership in industrial robotics and systems engineering
  – mastering of multiple disciplines: neuroscience, microsystems ...
  – excellent academic research in these fields
## Challenge 2 targets

<table>
<thead>
<tr>
<th>Today</th>
<th>5 – 15 years</th>
</tr>
</thead>
</table>
| • Robots operating in ‘modelled’, ‘structured’ and ‘constrained’ environments  
  • industrial robots  
  • ‘programmed’ service robots  
  • Basic understanding of computational representations of cognitive processes  
  • first applications in cognitive vision  
  • Human-machine interactions that are rather static / passive  
  • unable to adapt to human behaviours and to empower humans in their interactions | • Robots, machines and systems exhibiting advanced behaviour  
  • operating with gaps in knowledge  
  • operating in open-ended env.s  
  • operating in dynamic / frequently changing environments  
  • Machines and systems that understand their users / context  
  • learning from observation  
  • adapting to context  
  • Systems that analyse and understand multimedia and multimodal digital information  
  • all senses, gestures, natural language – ‘human-in-the-loop’ |
Challenge 2: Objective in ICT Call 3

2.1: Cognitive systems, interaction, robotics – 97 M€

- Robots handing tangible objects ... operating autonomously ...
  ... in cooperation with people ... grasp, manipulate, navigate ...
  ... detect, recognise, classify ...
- Robots, sensor networks or other artificial systems monitoring and controlling material and informational processes ... multi-sensory data fusion and interpretation
- Intuitive multimodal interfaces and interpersonal communication systems ... physical and cognitive capabilities, communication needs, context ...
Challenge 3: Components, systems, engineering

- Electronic systems underpin trillion Euro ICT markets

- Electronic systems are embedded in all artefacts of life
  - 20-40% of the value of new products comes from embedded electronics
  - increasing demand for lower cost, higher performance components

- Europe is currently leading in embedded electronics in a number of industries
  - car safety, engine control, fly-by-wire avionics, telecom equipment, medical equipment, industrial automation ...

- European firms also among top semiconductor manufacturers and equipment companies

- Europe enjoys leading positions in emerging fields
  - photonics, plastic electronics, flexible displays, integrated micro/nanosystems ...
### Challenge 3 targets

<table>
<thead>
<tr>
<th>Today</th>
<th>5 – 10 years</th>
</tr>
</thead>
</table>
| • 45 nanometer node  
  • 300 mm wafers | • Below the 32 nanometer node  
  • 450 mm wafers  
  • materials, processes, interconnects, design, manufacturing |
| • Conventional CMOS Silicon dominate  
  • ‘homogeneous’ integration | • New materials, higher levels of integration  
  • more heterogeneous (SoC, SiP) |
| • Photonics applications emerging | • Wider use of advanced photonics |
| • Design gap for embedded software | • Higher productivity in the design of embedded systems / software |
| • Unable to analyse aggregate behaviours, predict and control systems | • Higher control capacity of large-scale real time embedded systems |
| | • Embedded computing |
Challenge 3: Objectives in ICT Call 2

3.5: Photonic components and subsystems – 90 M€
- Core: lasers, light sources, optical fibres, image sensors)
- Application-specific components/subsystems: broadband networks, medical, sensing for environment, security ...

3.6: Micro/nanosystems – 83 M€
- smart systems: sensors, actuators, storage systems, communications, data management
- nano/bio/ICT: biosensors, bioMEMS, implants
- Integration of smart materials: textile, glass, paper
- Microsystems manufacturing technologies
3.7: Networked embedded & control systems - 47 M€

- Middleware platforms, supporting composability, scalability, minimal power consumption …
- Cooperating objects and wireless sensor networks, supporting objects cooperating under severe resource constraints …
- Control of large-scale distributed systems like energy, transport, manufacturing systems: mastering bandwidth limitations, delays, fading links, unavailable nodes; closing the control loop …
Challenge 4: Digital libraries and content

- Growing load of information and content and increasing demands for knowledge and skills
  - in less than 10 years, the average person will be managing terabytes of videos, music, photos, and documents every day
  - digital content production | consumption: from “few-to-many” to “many-to-many” models

- Today’s technology provides limited tools for access/interaction, development/creation, delivery/diffusion and preservation of content & knowledge

- Europe, with its unique cultural heritage and creative potential, is well placed to take advantage of technology developments and their use
**Challenge 4 targets**

**Today**

- Limited access and usability
  - content not efficiently exploited
  - interactivity limited to smart menus

- Tools for capturing and editing still in their infancy

- Content is not personalised

- Learning tools primarily focus on the delivery of content

**5 – 10 years**

- “Digital libraries” widely available
  - easy to create, access, interpret, use and preserve content and knowledge
  - cost-effective, reliable, multilingual

- Advanced authoring tools

- Effective semantic-based systems and knowledge management

- Mass-individualisation of learning experiences with ICT (mid-term); adaptive and intuitive learning systems (longer term).
Challenge 4: Objectives in ICT Call 3

4.1: Digital libraries and technology-enhanced learning – 50 M€

- Large-scale libraries, preservation: access, search, management ...
- Technology-enhanced, adaptive and intuitive learning: personalisation, communities-based, via games ...
Challenge 4: Objectives in ICT Call 3

4.2: Intelligent content and semantics – 50 M€

- Authoring, workflow, personalisation: interactive content, mixed reality / immersive consumption of adaptive content …
- Semantic foundations: probabilistic modelling, approximate reasoning …
- Knowledge mgmt systems: extracting meaning from info …
Challenge 5: Towards sustainable and personalised healthcare

- Rising demands on healthcare
  - by 2050 close to 40% of the Union’s population will be over 65 years
  - growing expectations of citizens for better care
  - increasing mobility of patients and health professionals
  - need to respond to risks for emerging diseases

- By 2010, ICT for Health spending may account for up to 5% of the EU’s total health budget, up from just 1% in 2000
  - need to access, understand and securely manage huge amounts of health information

- ICT is also supporting progress in medical research and a shift towards evidence-based medicine

- European businesses have every opportunity to become leading global players in the new ICT for Health industry
### Challenge 5 targets

#### Today

- Citizens, healthy or under treatment, cannot monitor their health
  - no access to comprehensive and secure Electronic Health Records

- Health professionals do not have fast and easy access to patient-specific data @ point-of-need
  - to support diagnosis or plan clinical interventions

- Health authorities do not make sufficient use of information processing systems

#### 5 – 10 years

- Innovative systems and services for personalised health monitoring.
  - e.g. wearable/portable ICT systems

- Efficient systems for point-of-care diagnostics
  - e.g. alert and management support

- ICT-based prediction, detection and monitoring of adverse effects
  - e.g. data mining

- Tools for patient-specific computational modelling & simulation of organs or systems (longer term)
  - patient-specific healthcare
  - early diagnostics & predictive medicine

### Innovative Systems and Services

- Wearable/portable ICT systems for monitoring health
- In-laboratory alert and intervention systems for diagnosis
- Data mining and analysis for detecting adverse effects
- Patient-specific computational models for simulations

### Tools for Longer Term

- Patient-specific healthcare for targeted treatments
- Predictive medicine for early intervention
Challenge 5: Objective in ICT Call 2

- **5.3: Virtual physiological human – 72 M€**
  - Patient-specific computational modelling and simulation: *multi-level computational models, toolbox for simulation/visualisation* ...
  - Data integration and new knowledge extraction: *coupling scientific research data with clinical data, data mining, image processing* ...
  - Clinical applications and demos: *surgery simulation, disease prediction, drugs safety* ...
Challenge 6: ICT for Mobility, environmental sustainability and energy efficiency

- Growing demand for transport services
  - more congestion, higher energy consumption, pollutant emissions

- Accidents causing fatalities and injuries
  - over 40,000 fatalities on the EU roads every year

- Increasing demand for natural resources
  - 1-2% per year for energy and growing water consumption

- Natural and industrial disasters has doubled in one decade
  - killing 500,000 people and causing 700 billion of damage

- Europe’s industry is one of the most competitive
  - automotive, transportation, civil protection, equipment supply
**Challenge 6 targets**

**Today**
- Safety of vehicles and their energy efficiency have improved, but
  - the “zero-accident scenario” is still a distant goal
  - current vehicle active safety (driver warning, hazard detection …) is still limited to stand-alone systems
- Risk management systems provide isolated solutions
  - no co-ordinated ICT-triggered alert of rescue and security forces
- Infrastructures are not sufficiently energy efficient
  - transport, buildings, production plants …

**5 – 10 years**
- Intelligent Vehicle Systems
  - secure and reliable vehicle-to-vehicle and vehicle-to-infrastructure comm systems
  - optimised traffic management at large scale + mobility services
- Fully integrated management systems / shared data to monitor, warn and react to environmental and other risks
- Intelligent monitoring of energy production, distribution, trading and use
Challenge 6: Objectives in ICT Call 2

- **6.2: ICT for cooperative systems – 48 M€**
  - Vehicle-to-vehicle, vehicle-to-infrastructure communication *for real-time traffic management and active safety support* ...
  - Field operational tests: *efficiency, quality, robustness, user-friendliness* ...

- **6.3: ICT for the environmental management and energy efficiency – 54 M€**
  - Collaborative systems for environmental management: *monitor, assess, report, respond* ...
  - ICT for energy-intensive systems: *optimise energy use profiles, monitor energy production, trading, distribution, consumption* ...
Challenge 7: ICT for Independent Living and Inclusion

- Between 1998 and 2025 the proportion of the population classified as elderly will increase from 20% to 28%
  - more people with high disability rates
  - smaller productive workforce

- Need for a paradigm shift in health and social care and new requirements for inclusion, accessibility and usability

- Complexity and lack of accessibility and usability of many ICT-based products and services is a major barrier for many people

- A major economic opportunity for European industry
### Challenge 7 targets

<table>
<thead>
<tr>
<th>Today</th>
<th>5 – 10 years</th>
</tr>
</thead>
</table>
| • Research on technology for independent living is in its infancy  
  - systems for inclusion  
  - assistive technology  
• Increasing complexity and limited usability of many products and services  
  - eAccessibility  
• Lack of interoperability between existing inclusive systems  
• Lack of interoperability between assistive technologies and mainstream ICT | • ICT-based solutions extending independence and prolonging active participation in society  
• ICT solutions that help reduce the 30% of the population currently not using ICT  
  - user-friendly systems  
• Cost-effective, interoperable solutions enabling seamless and reliable integration of devices and services |
Challenge 7: Objectives in ICT Call 2

7.2: Accessible and inclusive ICT – 43 M€

- Embedded generalised accessibility support: *mainstream accessibility* ...
- Simulation of user interaction: *optimise accessibility*
- Assistive systems based on non-invasive brain-to-computer-interaction: *augment performance of people with disabilities* ...
- Environments facilitating social inclusion of marginalised young people: *e.g. Web 2.0, gaming technology, media-enhanced learning* ...
Objective
- Pathfinder role: prepare for future ICT directions in the WP
- Avoid ‘tunnel vision’ in FP7, by exploring unconventional ‘minority’ options and opportunities off the beaten track
- To foster trans-disciplinary research excellence in emerging ICT-related research domains

FET Open Scheme
- Open Call for continuous submissions
- To help emerging research communities to organise and structure their research agenda

FET Pro-active Initiatives
- Fundamental cross-cutting long-term challenges in ICT:
  ICT Call 3:
  • Science of complex systems for socially intelligent ICT
  • Embodied Intelligence (targeting “long tail” of robotic service market)
  • ICT forever yours (targeting dependability, security and longevity of digital systems)
Horizontal support actions

• **International cooperation**
  - To pave the way for strategic partnerships in view of developing global standards and interoperable solutions and strengthening EU competitiveness
  - To widen the diffusion of the information society, especially in developing countries and strengthened the **EU policy for development**

• **Trans-national co-operation among National Contact Points**
  - One proposal including officially appointed NCPs
  - To improve NCP service across Europe
  - To help to simplify access to FP7 calls
  - To lower the entry barriers for newcomers
  - To raise the quality of submitted proposals
**Challenge 1:**
1. The network of the future  
   **Budget**: 200 M€
2. Service & software architectures, infrastructures & engineering  
   **Budget**: 120 M€
3. ICT in support of the networked enterprise  
   **Budget**: 30 M€
4. Secure, dependable and trusted infrastructures  
   **Budget**: 90 M€
5. Networked media  
   **Budget**: 85 M€

**Challenge 2:**
1. Cognitive systems, interaction, robotics  
   **Budget**: 96 M€

**Challenge 3:**
1. Next generation nanoelectronics components and electronics integration  
   **Budget**: 86 M€
2. Organic and large-area electronics and display systems  
   **Budget**: 63 M€
3. Embedded systems design  
   **Budget**: 40 M€
4. Computing systems  
   **Budget**: 25 M€
Challenge 4:
1. Digital libraries and technology-enhanced learning 52 M€
2. Intelligent content and semantics 51 M€

Challenge 5:
1. Personal health systems for monitoring and point-of-care diagnostics 72 M€
2. Advanced ICT for risk assessment and patient safety 30 M€

Challenge 6:
1. ICT for the intelligent vehicles and mobility services 57 M€

Challenge 7:
1. ICT and ageing 30 M€

FET proactive:
1. Nano-scale ICT devices and systems 20 M€
2. Pervasive adaptation 20 M€
3. Bio-ICT convergence 20 M€

Horizontal support actions
International cooperation 7 M€

FET-Open (separate Call for Proposals) 65 M€
ICT Call 1

Proposals received: 1836

- Ineligible: 13 (1%)
- Below threshold: 999 (54%)
- Above threshold: 824 (45%)

Retained for negotiation: 318 (17%)
## Objective Projects

<table>
<thead>
<tr>
<th>Objective</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network of the future</td>
<td>46</td>
</tr>
<tr>
<td>Service &amp; SW architectures, infrastructures and engineering</td>
<td>27</td>
</tr>
<tr>
<td>Networked enterprise</td>
<td>10</td>
</tr>
<tr>
<td>Secure, dependable and trusted infrastructures</td>
<td>24</td>
</tr>
<tr>
<td>Networked Media</td>
<td>20</td>
</tr>
<tr>
<td>Cognitive systems, interaction, robotics</td>
<td>26</td>
</tr>
<tr>
<td>Next generation nanoelectronics components and electronics integration</td>
<td>20</td>
</tr>
<tr>
<td>Organic and large-area electronics, visualisation and display systems</td>
<td>20</td>
</tr>
<tr>
<td>Embedded systems design</td>
<td>15</td>
</tr>
<tr>
<td>Computing systems</td>
<td>9</td>
</tr>
<tr>
<td>Digital libraries and technology-enhanced learning</td>
<td>12</td>
</tr>
<tr>
<td>Intelligent content &amp; semantics</td>
<td>15</td>
</tr>
<tr>
<td>Personal health systems for monitoring and point-of-care</td>
<td>9</td>
</tr>
<tr>
<td>Risk assessment and patient safety</td>
<td>9</td>
</tr>
<tr>
<td>Intelligent vehicles and mobility services</td>
<td>14</td>
</tr>
<tr>
<td>ICT &amp; ageing</td>
<td>10</td>
</tr>
<tr>
<td>FET proactive 1 - Nano-scale devices</td>
<td>9</td>
</tr>
<tr>
<td>FET proactive 2 - Pervasive adaptation</td>
<td>7</td>
</tr>
<tr>
<td>FET proactive 3 - Bio-ICT convergence</td>
<td>7</td>
</tr>
<tr>
<td>International cooperation</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>318</strong></td>
</tr>
</tbody>
</table>
ICT Call 2 – Open: 12 June 2007
Close: 9 Oct 2007

**Challenge 1:**
6. New paradigms and experimental facilities

**Challenge 2:**
40 M€

Critical infrastructure protection (open: 30 Aug, close: 29 Nov 2007)

**Challenge 3:**
6. Micro/nanosystems

5. Photonic components and subsystems
90 M€

7. Networked embedded and control systems
47 M€

**Challenge 5:**
3. Virtual physiological human
72 M€

**Challenge 6:**
2. ICT for cooperative systems
48 M€

3. ICT for environmental management and energy efficiency
54 M€

**Challenge 7:**
2. Accessible and inclusive ICT
43 M€
ICT Call 3 – Open: 4 Dec 2007
Close: 8 April 2008

**Challenge 2:**
1. Cognitive systems, interaction, robotics  

**Challenge 4:**
1. Digital libraries and technology-enhanced learning  
2. Intelligent content and semantics

**FET**
4. Science of complex systems for socially intelligent ICT  
5. Embodied intelligence  
6. ICT forever yours

**Horizontal support actions**
International cooperation  
Trans-national co-operation among NCPs

<table>
<thead>
<tr>
<th>Challenge/Action</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge 2</td>
<td>97 M€</td>
</tr>
<tr>
<td>Challenge 4</td>
<td>50 M€</td>
</tr>
<tr>
<td>Challenge 4</td>
<td>50 M€</td>
</tr>
<tr>
<td>FET 4</td>
<td>20 M€</td>
</tr>
<tr>
<td>FET 5</td>
<td>20 M€</td>
</tr>
<tr>
<td>FET 6</td>
<td>20 M€</td>
</tr>
<tr>
<td>Horizontal support actions</td>
<td>5 M€</td>
</tr>
<tr>
<td>International cooperation</td>
<td>3 M€</td>
</tr>
</tbody>
</table>
More Information

  - Presentations of each objective: [http://ec.europa.eu/information_society/events/koln_2007](http://ec.europa.eu/information_society/events/koln_2007)