

FP7 Structure

Work Programmes

Search for partners

ERA-NIS workshop, Chisinau-Oct. 2007



Structure of the presentation

- **FP7 genesis (dates, timing of the preparation)**
- **FP7 structure & budget**
- **Cooperation – structure, budget, instruments**
- **Third countries specific rules**
- **Cooperation – logic of Workprogrammes**
- **ICT – idea and structure**
- **ICT – challenges (calls 2007-08)**
- **Information source (link, documents)**

Tentative Roadmap for FP7

2005

- **6 April.....Commission - Adoption of FP7 proposals**
- 18 April.....Council - Exchange of views
- 7 June.....Council - Orientation debate
- **21 Sep.....Commission - Proposals on SPs + Rules for Participation and Dissemination**
- 11 Oct.....Council - Exchange of views on SPs + RfP
- 23 Nov.....Commission - Proposals under Art. 169/171
- 28-29 Nov...Council - Orientation debate on SPs + RfP
- 12-15 Dec...EP – 1st reading on FP

Tentative Roadmap for FP7

2006

- Feb/Mar.....Council - Common position on FP;
EP - 1st reading on RfP
- April.....Common position on RfP
- May/June...EP - 2nd reading on FP; Opinion on SPs;
2nd reading on RfP (earliest)
- June.....Council - Adoption of FP + RfP (earliest)
- July.....Council and EP - Adoption of FP + RfP
- July.....Council - Adoption of the SPs
- **Oct.....Commission - Adoption of Workprogrammes**
- **Nov.....Commission - Publication of 1st calls**

FP7: structure

“Cooperation”

Predefined themes, refined FP6 instruments

“Ideas”

Frontier research, competition, individual grants

“People”

Human potential, mobility

“Capacities”

Infrastructure, SMEs, science and society,

Joint Research Center – non-nuclear

+

EURATOM

SEVENTH FRAMEWORK
PROGRAMME

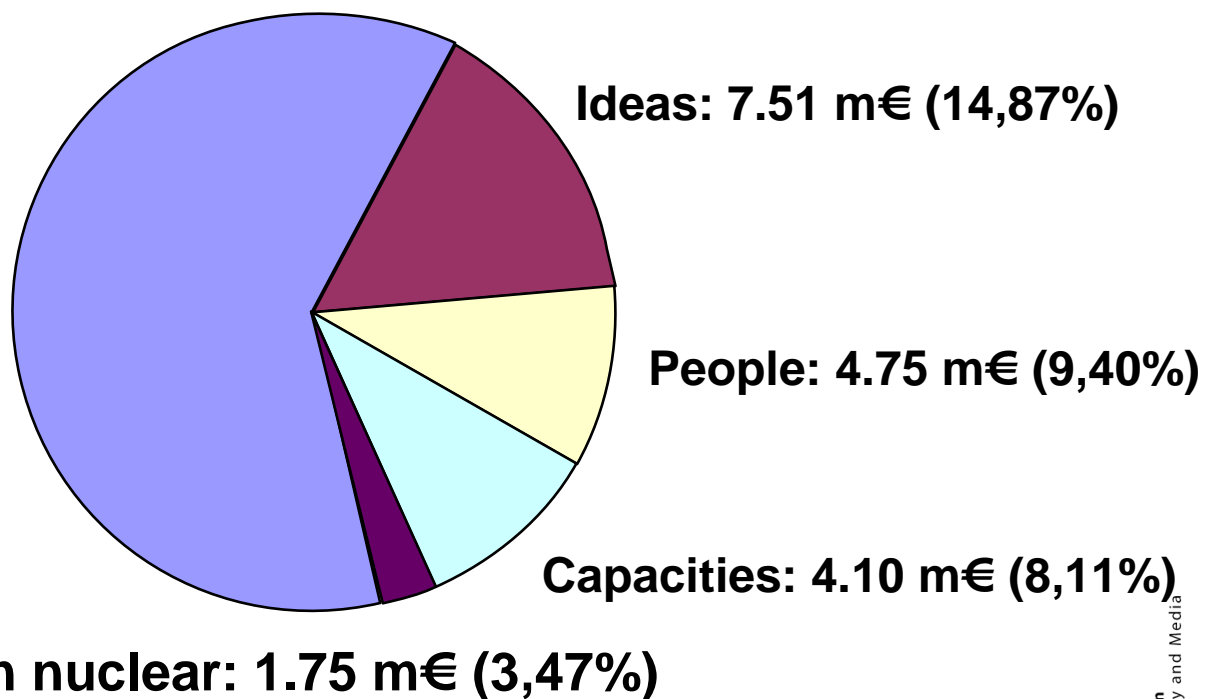
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FP7 Specific Programmes

Total budget: 50 521 bEUR

Cooperation: 32.413 m€ (64,16%)



FP7 “Capacities” – Research Capacity – 6 Parts

1. Research Infrastructures

2. Research for the benefit of SMEs

3. Regions of knowledge

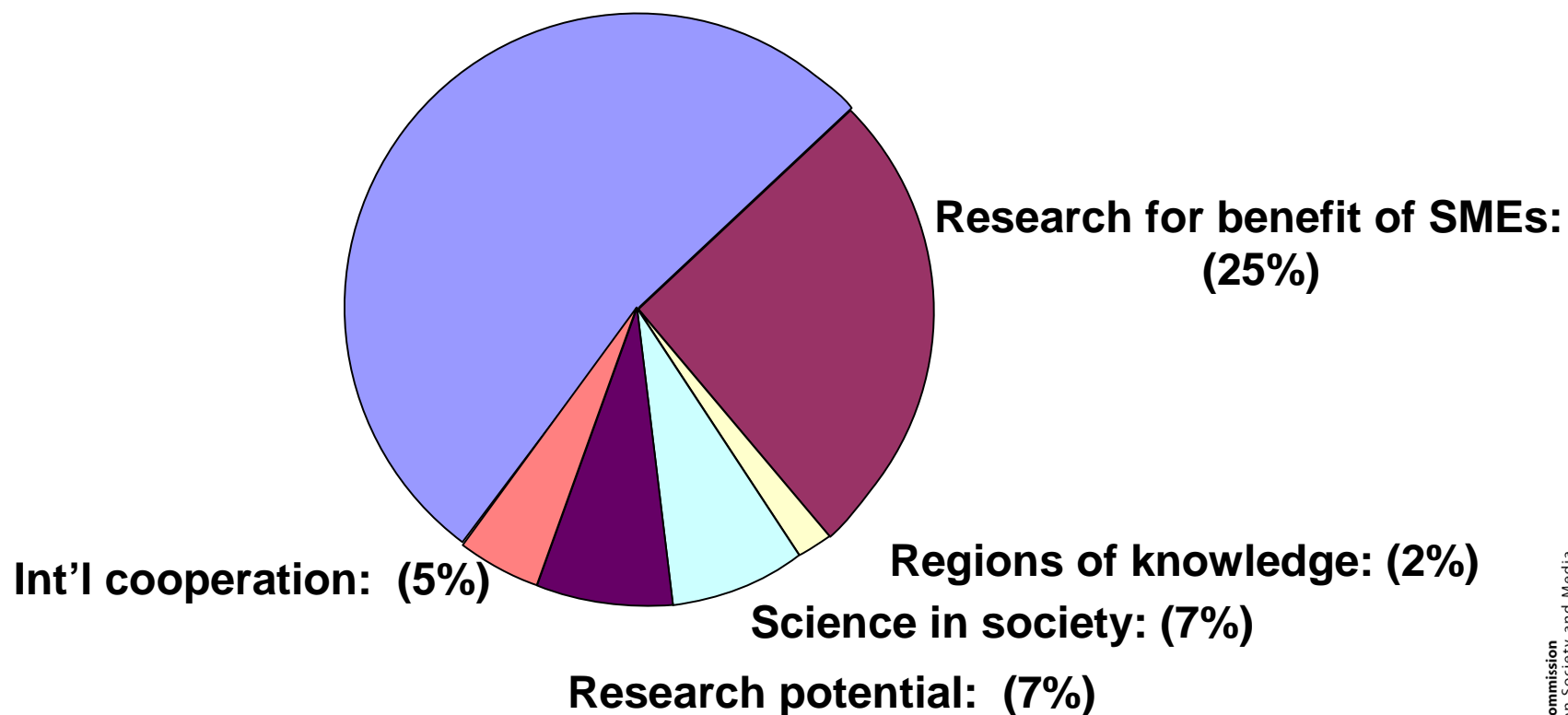
4. Research potential

5. Science in society

6. Activities of int'l cooperation

FP7 "Capacities" – Research Capacity – Total budget: 4.2 mEUR

Research infrastructures: (54%)



FP7 “Capacities” – Research Infrastructures

- Support to existing research infrastructures
 - **Research e-infrastructures**
 - **GÉANT, Grids, Super-/high-end-computing**
 - Transnational access
 - Integrating activities
- Support to new research infrastructures
 - Construction of new research infrastructures and major updates of existing ones
 - **Nanoelectronics cleanrooms**
 - Design studies

FP7 “People” – Human Potential

- Initial training of researchers
 - Marie Curie Networks
- Life-long training and career development
 - Individual Fellowships
 - Co-financing of national/international programmes
- Industry-academia pathways and partnerships
 - Industry-Academia Scheme
- International dimension
 - Outgoing International Fellowships; Incoming International Fellowships; International Cooperation Scheme; Reintegration grants
- Specific actions
 - Excellence awards

7FP Joint Research Centre (JRC)

- **Opportunities of co-operation offered by JRC**

- **Forms of co-operation for individuals:**

- ✂ ➤ **Seconded National Experts** at JRC institutes
- **Research Fellows** (PhD and Post-Doctoral Fellowships)
- **In-service trainings** at JRC
- **Statutory staff** – Contractual and Temporary Agents
- **Workshops and advanced trainings** (short, 1-2 day visits)

- **Forms of institutional co-operation:**

- **Research Projects in FP7** - JRC, can play a role as a Partner in a Project Consortium
- **Research networks**
- **Research Initiatives**

Useful links : <http://www.jrc.cec.eu.int/>
<http://projects.jrc.cec.eu.int/>

FP7 EURATOM Programme

Euratom comprises:

- Fusion Energy – construction and exploitation of ITER
- Nuclear Fission and Radiation Protection:
 - Management of radioactive waste
 - Reactor systems
 - Radiation Protection
 - Infrastructures
 - Human resources, mobility and training

“Cooperation” – Collaborative Research – Themes

1. Health

2. Food, Agri, Biotech

3. Information and Communication Technologies

4. Nano, Materials, Production

5. Energy

6. Environment

7. Transport (including Aeronautics)

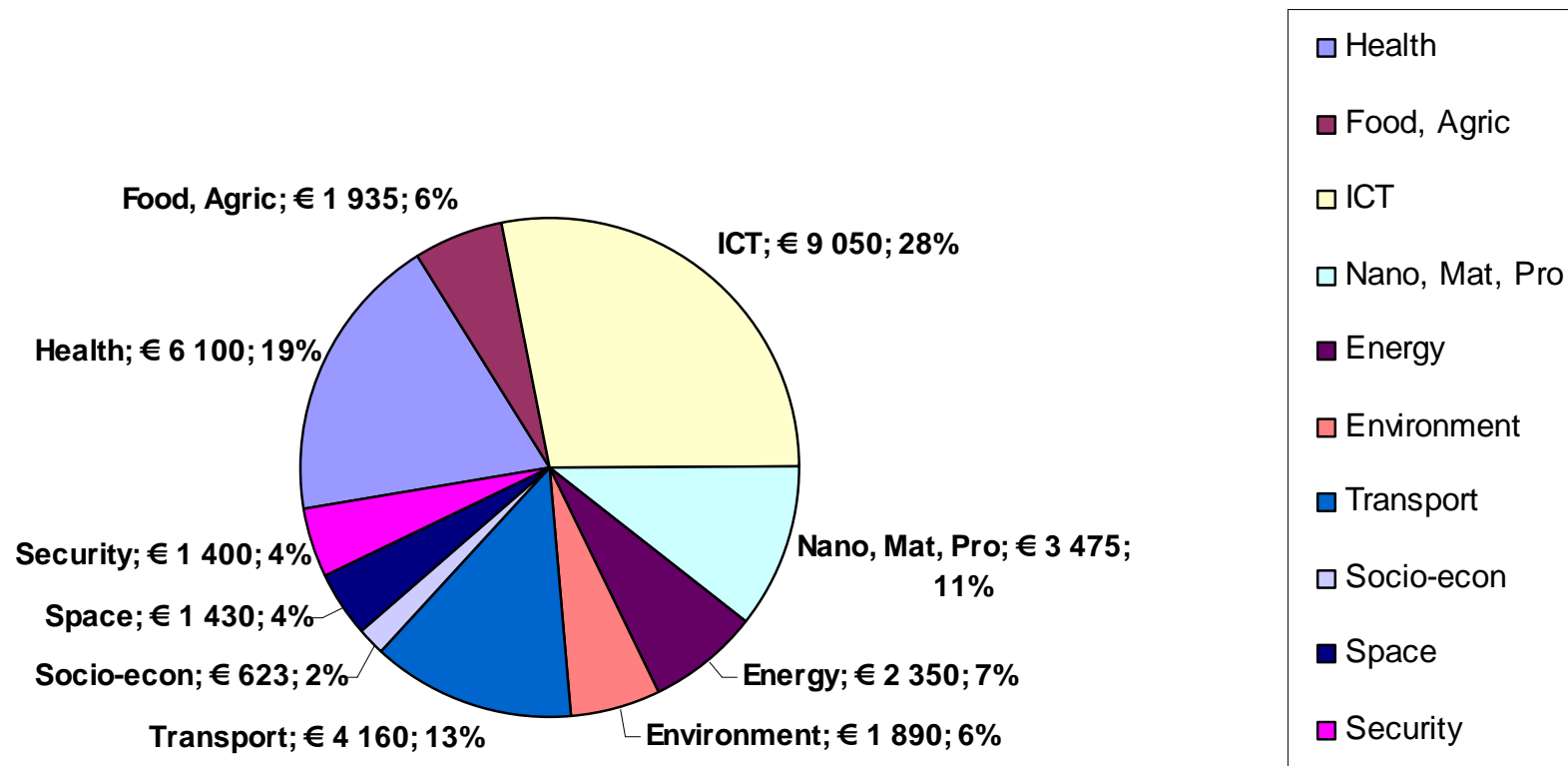
8. Socio-econ

9. Space

10. Security

“Cooperation” – Collaborative Research – Themes

FP7 Cooperation - total budget 32.413 bEUR



Cooperation - Funding schemes

- **Collaborative projects (CP)**
 - to develop new knowledge, new technology, products, demonstration activities
 - Two types: Small or medium-scale focused research actions (**STREP**), Large-scale integrating projects (**IP**)
- **Networks of Excellence (NoE)**
 - to strengthen S&T excellence and to increase efficiency in the use of resources by restructuring/integration of capacities
- **Coordination and support actions (CSA)**
 - aimed at coordinating or supporting research activities and policies (networking, exchanges, coordination of funded projects, studies, conferences, etc)
 - Two types: Coordination Actions (**CA**), Support Actions (**SA**)

“Cooperation” – Collaborative Research

- Support will be implemented across all themes through
 - **Collaborative projects (IP, STREP)**
 - **Networks of Excellence (NoE)**
 - **Coordination/support actions (CSA)**

And:

- **Joint Technology Initiatives**
(ICT area: ARTEMIS, ENIAC)

“Cooperation” – Joint Technology Initiatives

- In a limited number of cases
- Covering one or a small number of selected aspects
- Criteria include
 - Inability of existing instruments to achieve objectives
 - Degree and clarity of definition of objectives
 - Financial and resource commitment from industry
 - Capacity to attract additional national support
 - and leverage current or future industry funding
- Nanoelectronics, Embedded Systems, ...

FP7 – rules for Third Countries

Belarus, Russia, Ukraine and other NIS (newly Independent States) belong to ICPC (International Co-operation Partner Countries – Eastern Europe and Central Asia: EECA)

see: Rules of Participation/Workprogramme Annex 1: International Cooperation Partner Countries (ICPC) – list of countries

- **There are no rules limiting the participation of ICPC organizations !!!**
- Some FP7 (cooperation) areas may call for SICA (Specific International Cooperation Actions) proposals – details in dedicated Workprogramme – be careful of specific conditions and requirements (e.g. participation of minimum 2 Member States or Associated countries + 2 targeted ICPC countries)

Priorities in FP7 Cooperation – Information Source

Europa-Cordis web site: <http://cordis.europa.eu>

How to find? Follow:

Europa – Cordis – FP7 – Find Call - FP7-ICT-2007-2

Most important documents:

- call fiche
- Work Programme of the Priority (*e.g. ICT, Energy etc.*)
- Guides for Applicants (depend on the instrument:IP, STREP etc.)

Additional (useful):

- Handbook on evaluation and selection of proposals
- Rules for submission of proposals and the related evaluation

FP7- Cooperation: Structure of Workprogrammes

Workprogramme = proposer's bible

Logic of the content:

1. **ICT area:**

ICT → Challenge → Objective

2. **NMP area:**

Nano/Materials/Production activity → area → topic

3. **Energy area:**

Activity Energy → Area Energy → topic Energy

FP7- Cooperation: Structure of Workprogrammes

Workprogramme *Logic of the content:*

Example of **ICT area:**

ICT → Challenge → Objective

ICT

Challenge 3: Components, systems, engineering

Objective: ICT – 2007.3.6 Micro/nanosystems

call: 2 ICT (deadline 8th Oct 2007)

FP7- Cooperation: Structure of Workprogrammes

Workprogramme *Logic of the content:*

Example of **ENERGY area:**

Energy → Energy Activity → Area Energy → Topic Energy

Energy

Energy Activity: 1 Hydrogen and Fuel Cells

Area Energy: 1.1 Fuel Cells

Topic: ENERGY.2207.1.2.2: New materials and processes for advanced multi-fuel processors

FP7- Cooperation: Structure of Workprogrammes

Workprogramme *Logic of the content:*

Example of **Nanosciences, Nanotechnologies, Materials and New production Technologies – NMP**

Nano/Materials/Production activity → area → topic

NMP

Materials Activity

Area: 4.2.2 Knowledge-based smart materials with tailored properties

Topic: NMP-2007-2.2-1: Organic materials for electronics and photonics

ICT – The largest priority theme of FP7

- ICT Technology Pillars
 - pushing the performance and functionality of technology
- Integration of Technologies
 - integrating multi-technology sets that underlie new services
- Applications Research
 - providing the knowledge and the means to develop a wide range of innovative ICT applications
- Future and Emerging Technologies
 - supporting research at the frontier of knowledge

Priorities based on wide consultations

- Reinforce Europe's strongholds
 - Europe's industry and technology position
- Seize new opportunities for Europe
 - (r)evolutions and potential impacts:
industrial competitiveness, socio-economic goals
- Ensure that interventions are significant and that Europe has the capacities to implement
 - high-risk, medium-to-long term, trans-national collaborative research

Reinforce Europe's strongholds

- Network and service infrastructures
 - communication equipment and services, business software, security solutions ...
- Components and embedded systems
 - semiconductors, equipment, photonics, plastic electronics, integrated micro/nano systems ... embedded systems in vertical markets: cars, planes, medical, telecom ...
- A strong academic research community
 - in core ICT fields and in other disciplines relevant for ICT: biotech, materials, cognitive sciences ...

Seize new opportunities for Europe

- New technology paths
 - more “intelligent” technology: ICT systems that learn & reason, that contextualise & adapt, that interact & act autonomously
 - driven by developments in cognitive systems, sensing and interaction and advanced robotics
- Growing demand and new ways of using ICT
 - digital content and knowledge creation and use
 - sustainable and personalised healthcare
 - intelligent and safe transport, sustainable development
 - independent living and inclusion

Work Programme approach and structure

- A limited set of *Challenges* aiming at
 - overcoming technology roadblocks to achieve specific characteristics, and/or
 - end-to-end systems targeting specific socio-economic goals
- A *Challenge* is addressed through a limited set of Objectives that form the basis of Calls for Proposals
- An Objective is described in terms of
 - target outcome - in terms of characteristics
 - expected impact - in terms of industrial competitiveness, societal goal, technology progress etc.
- A total of 24 Objectives expressed within
7 Challenges

FP7 - ICT calls

1. ICT call 2:

call identifier: FP7-ICT-2007-2

closure date: 8th Oct 2007 (17:00 Brussels time)

indicative budget: 477 MEUR

2. ICT call 3:

call identifier: FP7-ICT-2007-3

closure date: Mar/Apr 2008 ?

indicative budget: 265 MEUR

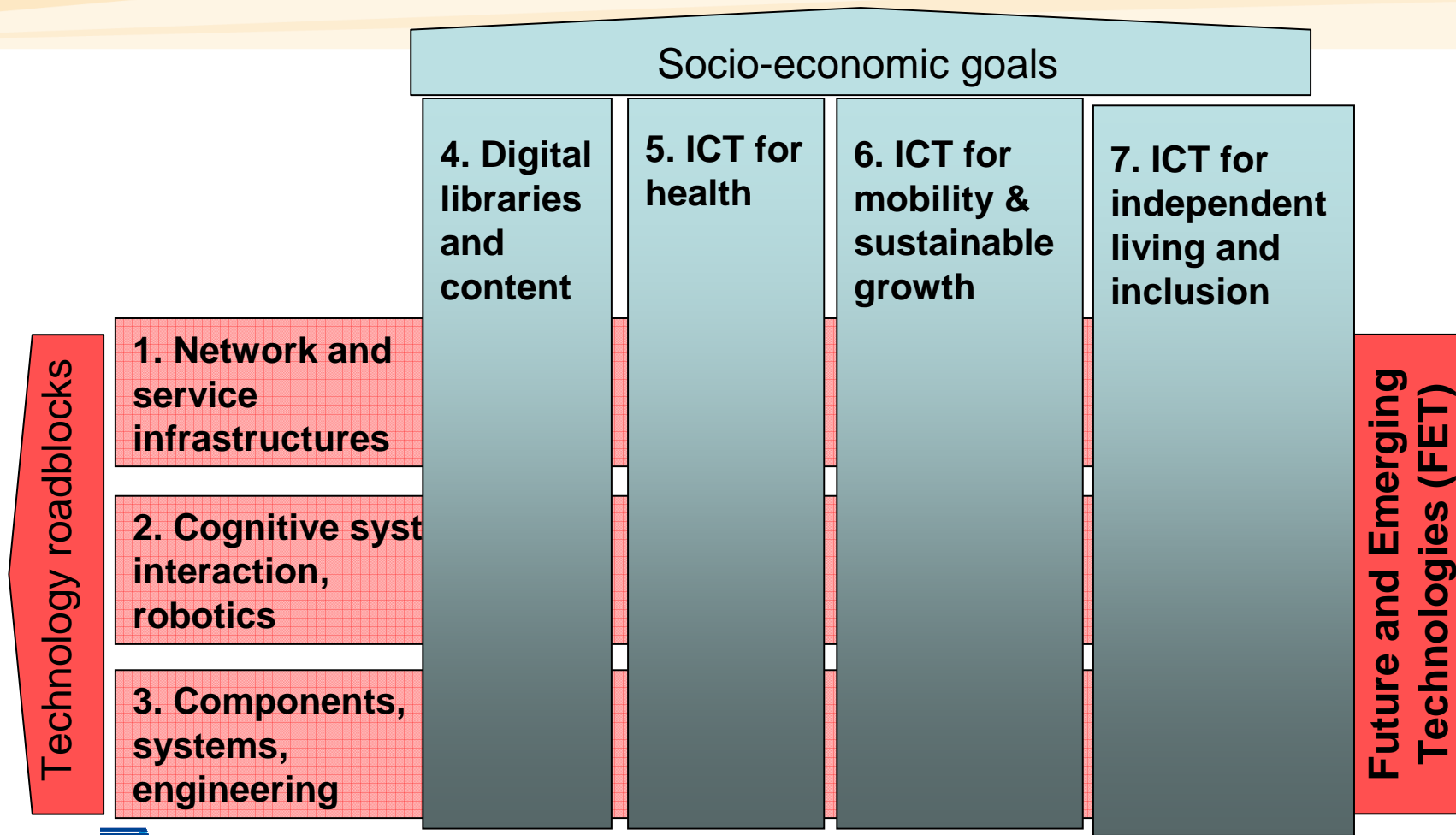
3. Joint call ICT & Security 1:

call identifier: ICT-SEC-2007-1

closure date: 29th Nov 2007 (17:00 Brussels time)

indicative budget: 40 MEUR

Work Programme 2007 Challenges



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

Today

- “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

5 – 10 years

- 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

Challenge 1: Objectives in Calls for Proposals

ICT Call 2

- New Paradigms and experimental facilities
- Critical infrastructure protection

Challenge 2: Cognitive systems, robotics and interaction

- 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

Today

5 – 15 years

- 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: Objectives in Calls for Proposals

ICT Call 3

- Cognitive systems, interaction, robotics

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

Today

- 45 nanometer node
 - 300 mm wafers
- Conventional CMOS Silicon dominate
 - 'homogeneous' integration
- Photonics applications emerging
- Design gap for embedded software
- Unable to analyse aggregate behaviours, predict and control systems

5 – 10 years

- Below the 32 nanometer node
 - 450 mm wafers
 - manufacturing, processes, devices, wafers, materials
- New materials, higher levels of integration
 - more heterogeneous (SoC, SiP)
- Wider use of advanced photonics
- Higher productivity in the design of embedded systems / software
- Higher control capacity of large-scale real time embedded systems

Challenge 3: Objectives in Calls for Proposals

ICT Call 2

- Photonic components and subsystems
- Micro/nanosystems
- Networked embedded and control systems

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, interpret, use and preserve resources
 - 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 Calls for Proposals

ICT Call 3

- Digital libraries and technology-enhanced learning
- Intelligent content and semantics

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)

Challenge 5: Objectives in Calls for Proposals

ICT Call 2

- Virtual physiological human

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 Calls for Proposals

ICT Call 2

- ICT for cooperative systems
- ICT for the environmental management and energy efficiency

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

Today

- 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

5 – 10 years

- 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 Calls for Proposals

ICT Call 2

- Accessible and inclusive ICT

Future and Emerging Technologies

Objective

- To lay foundations of the ICT innovations of tomorrow
- To foster trans-disciplinary research excellence in emerging ICT-related research domains
- To help emerging research communities to organise and structure their research agenda

Impact

- Pathfinder role: prepare for future ICT directions in the WP
- Create new long-term competitive options for ICT
- Avoid 'tunnel vision' in FP7, by exploring unconventional 'minority' options and opportunities off the beaten track

FET structure and content

- FET Open
 - Open to any foundational ICT-related research
 - High-risk / high-potential impact
 - To shape emerging research communities and agendas
 - Coordination and international cooperation
 - Continuous submission, CP (STREP only), CSA (CA only)
- FET pro-active
 - Fundamental cross-cutting long-term challenges in ICT:
 1. Nano-scale ICT devices and systems
 2. Pervasive adaptation
 3. Bio-ICT convergence
 4. Science of complex systems for socially intelligent ICT
 5. Embodied Intelligence
 6. ICT forever yours

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

ICT in FP7 – Information Source

Europa-Cordis web site: <http://cordis.europa.eu>

How to find? Follow:

Europa – Cordis – FP7 – Find Call - FP7-ICT-2007-1

Most important documents:

- call fiche
- ICT Work Programme
- Guides for Applicants (depend on the instrument:IP, STREP etc.)

Additional (useful):

- Handbook on evaluation and selection of proposals
- Rules for submission of proposals and the related evaluation

FP7 – Searching for partners

How and where find a good coordinator/partner?

1. Personal contacts (have already cooperation with organization/person?)
2. My friends/partners cooperate with others, ask them
3. Contact your NCP, prepare your profile and interest or project's idea
4. Internet tools : Cordis, Ideal-ist (ICT area)
5. Search for SSA projects in your thematic area (contacts, data bases, publications)
6. Visit events such as thematic conferences, workshops, infodays etc.

FP7 – Searching for partners

Partner search tools:

CORDIS: www.cordis.lu

Or <http://cordis.europa.eu/en/home.html>

European Union research Funding → Find a partner:

Key search fields:

- Search term (key word)
- proposal/profile
- Programme
- Country

FP7 – Searching for partners

Partner search tools:

Attention! Concerns only ICT area

Ideal-ist:

www.ideal-ist.net

Selection of project's ideas by

- Calls
- Keywords
- Challenge
- Objective

...and other parameters

***Thank you for your
attention!***

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