



# Optikk. Muligheter i 7. rammeprogram

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SINTEF IKT

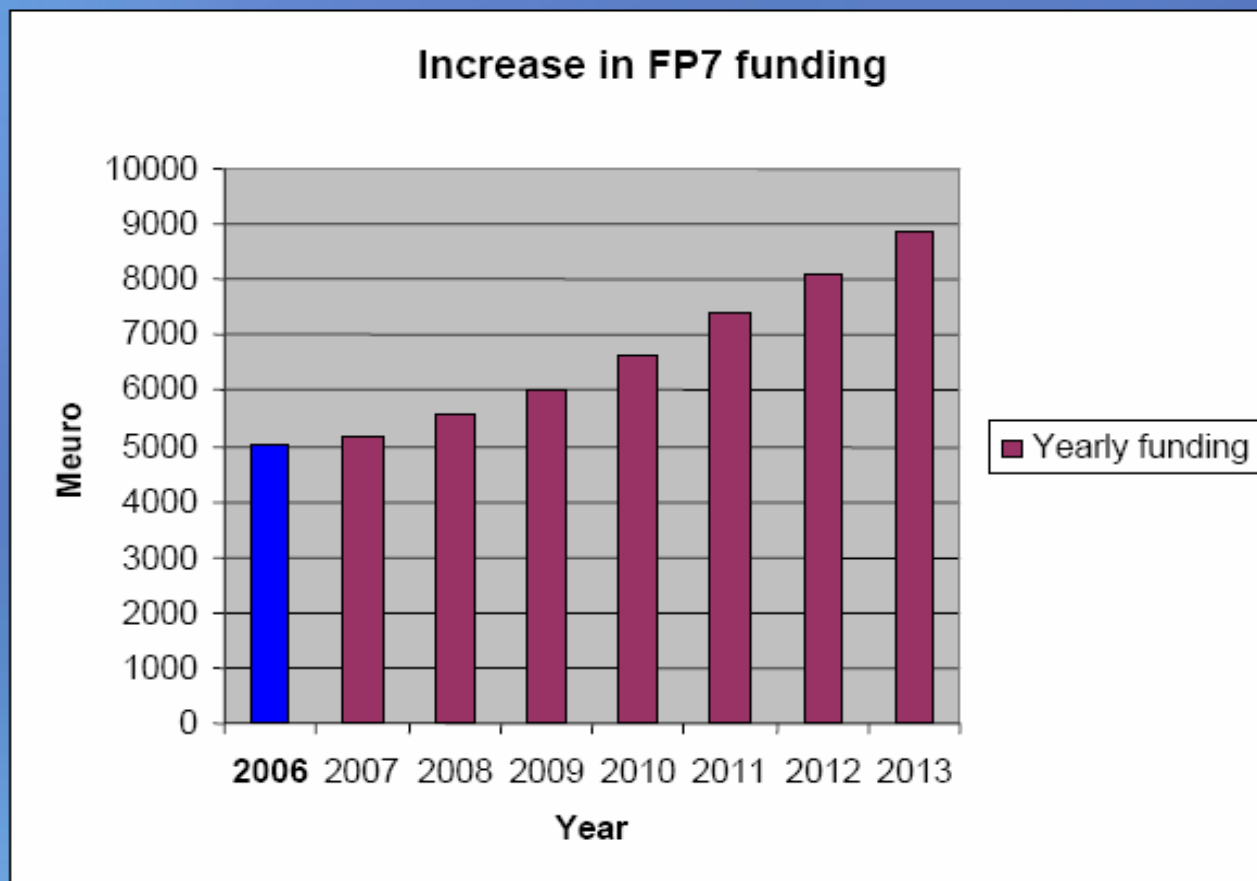
# Bakgrunn

- **Hvordan utnytte FP7 mot feltet OPTIKK.**
- Optikk/fotonikk **ikke et eget område.**
- Basert på tilgjengelig dokumentasjon (foreløpig fra EUs side).
- Optikk har muligheter i nesten alle programmer. Begrenser oss til det **mest relevante for norsk industri** og oss.
- Hvor finne utlysninger relevante for dere.

<http://cordis.europa.eu/fp7/home.html>

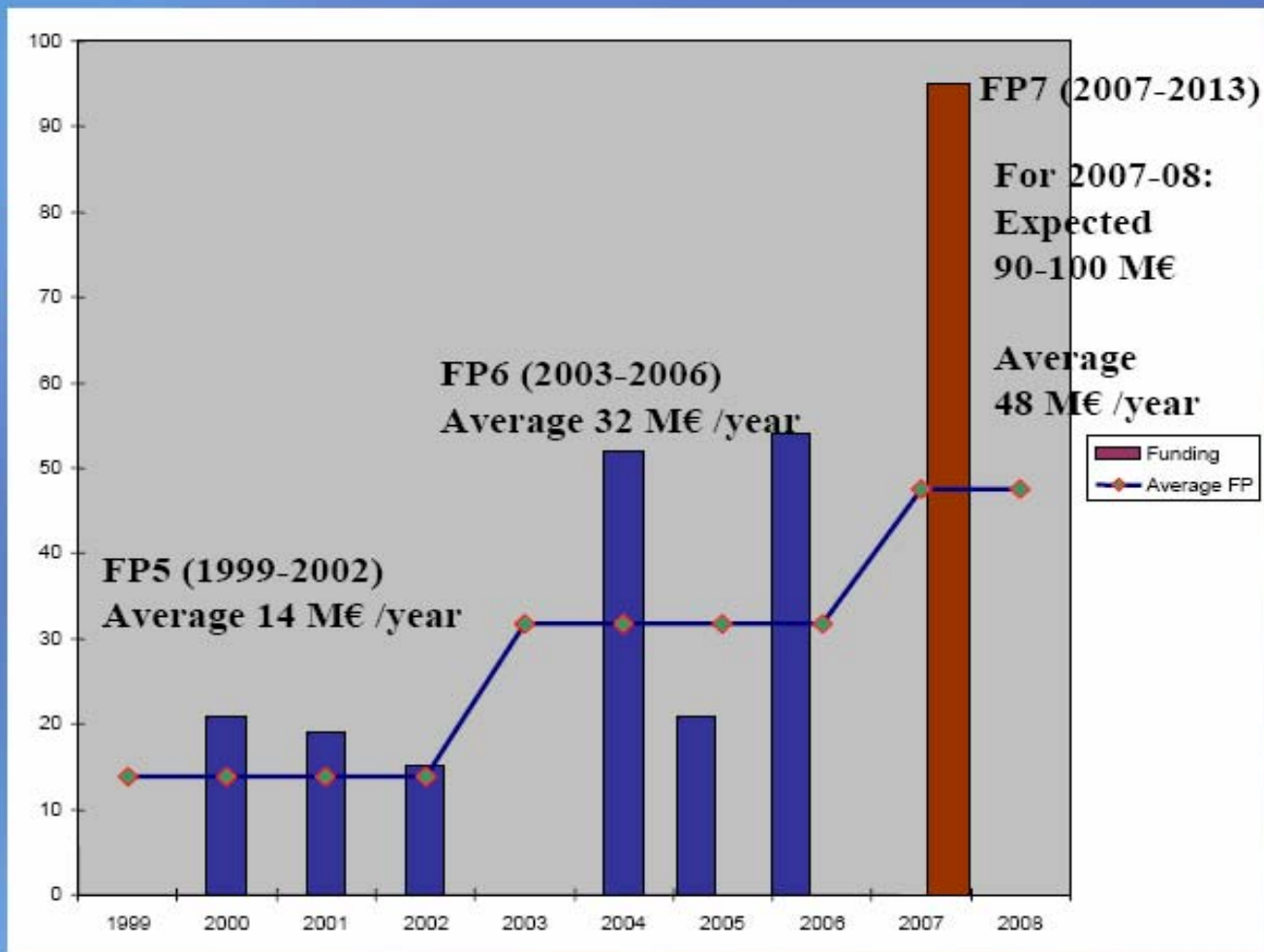
## Gradual increase in total funding for FP7 over 7 year period

- Budget distribution discussed only for 2007-08



# Photonics in FP7 ?

## Funding for Photonic Component Research



# What's New in FP7? (**draft**)

## Rules for Participation

- No additional cost model, all partners on full cost model.
- Maximum funding for research and **demo**:  
**50%** of eligible costs.
- Universities Research organisations + SMEs :  
**75%** of eligible costs.
- Other activities (management, coordination, support actions): **100%**



# Om små og mellomstore bedrifter (SME)

SME < 250 ansatte, omsetning < 50 MNOK

- FP7 legger svært stor vekt på deltagelse av SME-er.

- Mat:

- **“SME relevant research.** The work programme of this theme is designed to attract industrial participants, in particular SMEs. These might be: end-users of new technologies or technology-based biotechnology companies.”

- ICT:

- **“The role of SMEs in innovation is undisputable.** In ICT, they play a vital role in the development of new visions and in transforming them into business assets.”

- SME-er får nå dekket 75 % av sine utgifter fra EU (tidligere 50%)

# Arbeidsprogram i FP7

1. HEALTH
2. FOOD, AGRICULTURE, BIOTECHNOLOGY
3. INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT)
4. NANO, MATERIALS, PRODUCTION
5. ENERGY
6. ENVIRONMENT
7. TRANSPORT (INCLUDING AERONAUTICS).
8. SOCIO-ECONOMIC RESEARCH
9. SECURITY
10. SPACE

# Helse

- Hybride avbildningssystemer – eks. ultralyd/optisk
- Nye/forbedrede optiske metoder for diagnostikk og sykdomsovervåking
  
- Call identifier: **HEALTH-2007-A**
  - Date of publication: [early 2007] Closure date: (likely March 2007)

# Helse

## Tema 1: Biotechnology, generic tools and technologies for human health

### HEALTH-2007-A-1.1.2.0-1: Development of a hybrid imaging system.

The aim is to develop a novel hybrid imaging system **combining different biomedical imaging modalities into a single system for concurrent measurement with the different modalities. Examples could be PET/MRI, MRI/Ultrasound, Ultrasound/Optical.** The system should advance multi-modality imaging or enable new types of therapeutic intervention, and should be tested in preclinical studies with a view towards translational medicine. Special emphasis will be given on quantitative technologies.

**Funding scheme:** Collaborative projects (Small or medium-scale focused research projects).

**Expected impact:** To provide researchers and clinicians in the medium term, with tools providing complementary information about multiple molecular/cellular processes and/or anatomy by combining different imaging modalities. It should also be of interest to European industry.

# Helse

**Tema 1: Biotechnology, generic tools and technologies for human health**

**HEALTH-2007-A-1.1.2.0-2: Novel optical methodologies for detection, diagnosis and monitoring of disease or disease-related processes.**

**The aim is** to develop novel methodologies that make use of light to aid in detection, diagnosis and/or monitoring of disease or disease-related processes. The methodology should provide *in vivo* functional information (e.g. blood flow, oxygenation, metabolism) or quantitative analysis of disease progression. **It should make use of new and/or advanced approaches in optics (such as coherence, polarization, tomography, non-linear processes or photon statistics) in order to improve the sensitivity, resolution and quantitation of optical imaging methods.**

**Funding scheme:** Collaborative projects (Small or medium-scale focused research projects).

**Expected impact:** The development of novel optical imaging methods that aim at providing new and better information on disease and disease-related processes. This should allow making use of the latest developments in optics for the benefit of human health.

# Mat

- Små sensorer for overvåking av næringstilstand
- Smart kontroll av mat og fór
- Call identifier: *COOP-KBBE-2007-2A*
  - Date of publication: (early 2007)
  - Closure date: 1st stage deadline (mid September).
  - For those proposals passing the first stage evaluation, there will be a deadline for full proposals of (end January 08) )

# Mat

## Activity 2: Fork to farm: Food, health and well being

### KBBE-2007-2-2-03: Optical technologies for monitoring the human nutrition status and the onset of nutrition-related health problems

Recent advancements in the optics/photonics industries and current progress in the miniaturisation of electronic micro-systems create potentials for designing easily operated and portable sensor systems for monitoring the human nutrition status. Research should focus on non- and minimally-invasive sensor systems for monitoring the supply with beneficial food compounds, for detecting the exposure to dietary risk factors, and/or for diagnosing the early onset of nutrition disorders (via disease-related biomarkers). A close cooperation of nutrition experts with engineering disciplines and/or (bio)physics as well as the participation of high-technology SMEs are compulsory.

**Funding scheme:** Up to two small collaborative project(s) / NEST activity

**Expected impact:** Improvement of the quality of life and well being for millions of people suffering from nutrition-related disorders by providing them with devices for making routine measurements of their individual nutrition status, risk factors and nutritional needs. Enhancement of the collaboration between different scientific disciplines and stakeholders (nutrition, omics sciences, clinicians, engineering and high technology companies,...). These developments will constitute an important technology innovation in nutrition research in general and into personalised nutrition.

**Call:** KBBE-2007-1

# Mat

## Activity 2: Fork to farm: Food, health and well being

### KBBE-2007-2-3-01: Smart control for improved food and feed technologies

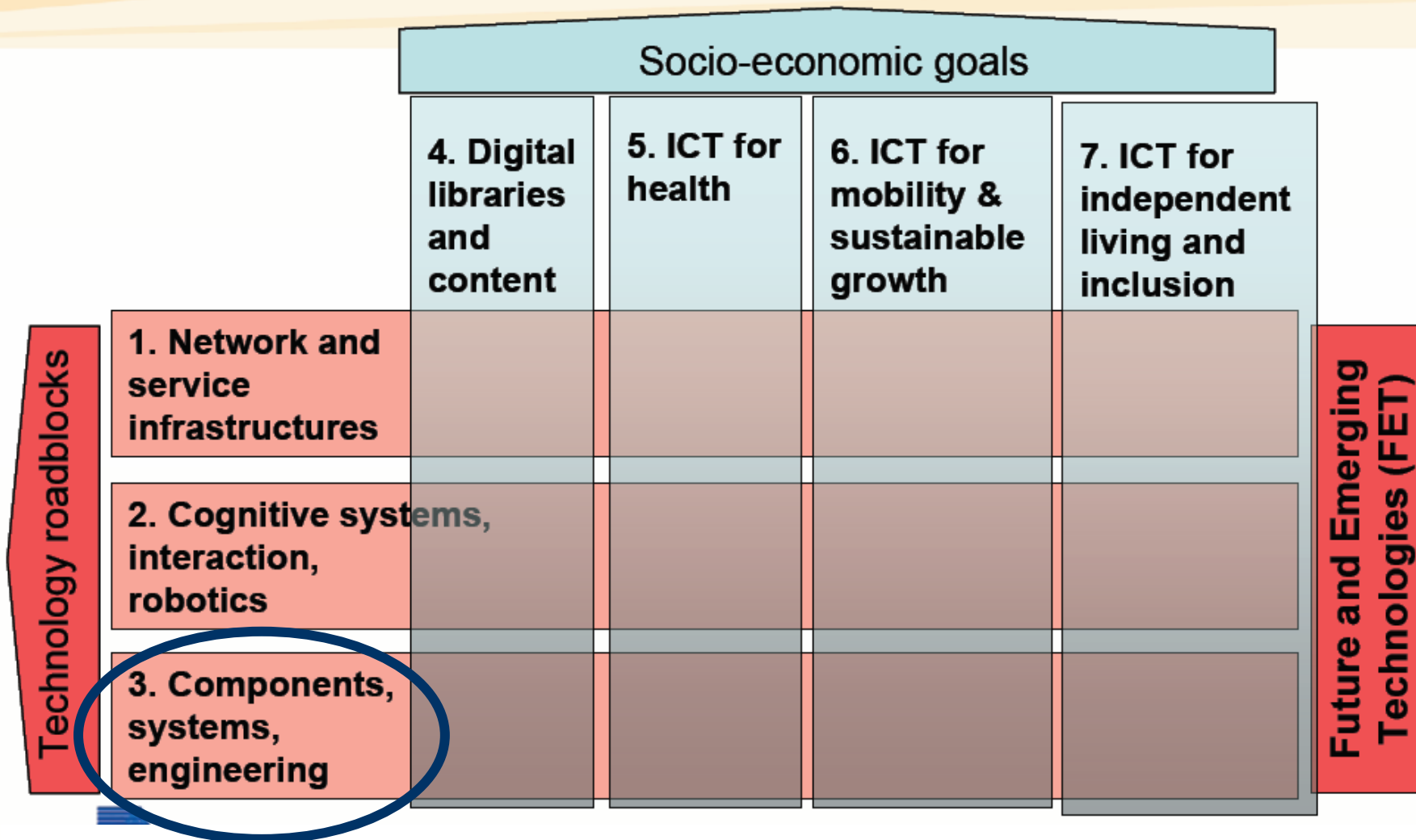
**The aim is** to develop robust and reliable quality sensing systems, in combination with computer simulation programmes, for process design, monitoring and control, such as applications of Process Analytical Technology. They should gradually replace ex-post quality control systems taking into account product properties and quality as well as environmental constraints. Scientific trends in technologies will be adequately considered in order to improve the diversity of foods and feeds taking into account the industry and consumer needs. Collaboration of food technologists, sensor and information technology (IT) specialists as well as industrial quality managers is needed. **SMEs from the IT and sensor sector should be involved**, in particular for the demonstration activities.

**Funding scheme:** Large collaborative project

**Expected impact:** More sustainable processes in terms of energy and waste, performance improvement and reduced production costs supporting the competitiveness of European food, sensor and IT industries, in particular SMEs. Increased number of patents in the area and new market opportunities. Expected to contribute to the implementation of the SRA of the EU Technology Platform 'Food for Life'.

**Call: KBBE-2007-1**

# ICT



	Budget (M€)	Call 1	Call 2	Call 3	FET Open
<b>Challenge 1:</b>					
1. The network of the future	200	200			
2. Service and software architectures, infrastructures and engineering	150	150			
3. Secure, dependable and trusted infrastructures	90	90			
4. Networked media	85	85			
5. New Paradigms and experimental facilities	40		40		
6. Critical infrastructure protection <sup>1</sup>	20		20		
<b>Challenge 2:</b>					
1. Cognitive systems, interaction, robotics	193	96		97	
<b>Challenge 3:</b>					
1. Next generation nanoelectronics components and electronics integration	86	86			
2. Organic and large-area electronics and display systems	63	63			
3. Embedded systems design	40	40			
4. Computing systems	25	25			
5. Photonic components and subsystems	90		90		
6. Micro/nanosystems	83		83		
7. Networked embedded and control systems	47		47		
<b>Challenge 4:</b>					
1. Digital libraries and technology-enhanced learning	102	52		50	
2. Intelligent content and semantics	101	51		50	
<b>Challenge 5:</b>					
1. Personal health systems for monitoring and point-of-care diagnostics	72	72			
2. Advanced ICT for risk assessment and patient safety	30	30			
3. Virtual physiological human	72		72		
<b>Challenge 6:</b>					
1. ICT for the intelligent vehicles and mobility services	57	57			
2. ICT for cooperative systems	48		48		

optiske sensorer,  
kamerasystemer,  
billedbehandling

fotolitografi,  
målesystemer for  
halvlederindustri

displayteknologi,  
fargegjengivelse, 3D,  
"energy efficient  
microprojectors"

Både "core" og "application  
specific" komponenter. Lyskilder,  
innovative sensorer, medisinsk  
diagnose, miljøovervåking

Anvendelser innen  
diagnostikk anvendelser,

Robotsyn og optiske  
sensorer

# ICT Calls

## ■ Call title: ICT Call 1

- Call identifier: FP7-2007-ICT-1

- Date of publication: Jan/Feb 2007      Closure date: April 24, 2007

## ■ Call title: ICT Call 2

- Call identifier: FP7-2007-ICT-2

- Date of publication: May/June 2007      Closure date: Sep/Oct 2007

## ■ Call title: ICT Call 3

- Call identifier: FP7-2007-ICT-3

- Date of publication: Dec 2007      Closure date: Mar 2008

# ICT

## Objective 3.3.1.1: Next-Generation Nanoelectronic Components and Electronics Integration

The objectives are to advance miniaturisation in the baseline CMOS technology targeting digital components and complex digital Systems on Chip; to master diversification targeting non-digital applications, **heterogeneous integration in Systems-on-Chip or Systems-in-a-Package**

# ICT

## Objective 3.3.1.2: a) Organic and large-area electronics and display systems

Organic and large-area technologies for logic, memory and **light-emitting functionalities** addressing e-paper, smart systems on tags, low-cost RFIDs, **lab on chip devices**, **intelligent packaging**, **displays**, signage, and **intelligent lighting** systems. Emphasis will be on **large-area and low-cost manufacturing technologies** like printing involving additive processes and related materials, on new device structures, on advanced modelling, simulation, and characterisation for circuit design, on encapsulation, interconnects and system in foil integration, **on innovative sensing**, energy storage and scavenging, and power management functions. Attention should be paid to the overall manufacturing aspects including cost, capital investment and environmental impact.

**Objective 3.3.1.2: b) Advanced displays systems.** **Visualisation systems extending colour gamut and dynamic range beyond current state-of-the-art, taking into account human vision and perceptual models.** They should support multi-viewer, unaided and unrestricted 3D viewing, as well as natural interaction modalities. This includes signal acquisition, processing and representation technologies for 3D-systems. Research results are to be integrated into working prototypes addressing key professional and consumer applications. Further outcomes will be portable display systems such as e.g. zero-power / ruggedized displays, flexible and/or transparent devices, energy efficient micro-projectors, and lightweight high-resolution vision glasses.

# ICT

## Objective 3.3.2.1: Photonic components and subsystems

### Expected Impact

- Leading positions of European industry in high-value photonic products.
- New photonic based applications in several industrial sectors with emphasis on communications, health, well-being, environment, safety and security.
- Continued European leadership Europe in RTD in photonics from components to systems, securing the necessary human resources and knowledge to design, produce and use new generations of photonic components.

## Objective 3.3.2.1: Photonic components and subsystems

**a. Core photonic components and subsystems**, which are essential in multiple application fields:

- (1) High performance lasers.
- (2) High brightness, power efficient solid-state light sources for ICT and general lighting applications.
- (3) Optical fibres for high performance and for specific functions.
- (4) High performance image sensors.
- (5) Sensors exploiting innovative sensing principles.

**b. Application-specific photonic components and subsystems** for application fields, which are strategic for Europe and which are important drivers of photonics technology development: Components and subsystems for:

- (1) truly cost effective broadband core networks at 40 Gb/s or beyond per channel.
- (2) scalable, future-proof and economic broadband access and local area networks.
- (3) minimally invasive medical diagnosis and prevention.
- (4) sensing for environment, well-being, safety and security.

**c. Underlying technologies:**

- (1) *Integration and manufacturing technologies:* Holistic approaches for reducing the size and cost of photonic components and subsystems, for improving their performance, manufacturability and testability, for increasing their degree of functional integration, and for advancing photonic/electronic convergence.
- (2) *Design methodologies and tools:* Holistic and widely applicable approaches for designing photonic components to improve design quality and efficiency. This includes work on modelling, simulation and characterisation.

**d. Complementary measures**

*Joint assessment* by users of prototype components, subsystems and equipment from European suppliers. *Networking, integration and structuring* of advanced photonics RTD capacities and activities.

**e. Support measures**

Access to centres of expertise and foundries to facilitate the deployment of advanced technologies.

Raising the interest of young people in photonics careers, and stimulating cross-national schemes for graduate education.

Supporting the development of RTD strategies through roadmapping, consensus building, coordination with Member States, and international cooperation.

## Objective 3.3.2.1: Photonic components and subsystems

### **Funding schemes**

- a-c): Collaborative projects (CP);
- d): Collaborative projects (CP), Network of Excellence for networking and structuring (NoE);
- e): Coordination and support actions (CSA)

### **Indicative budget distribution**

Total: 90 M€

- CP 76 M€ of which a minimum of 26 M€ to IP and a minimum of 30 M€ to STREP;
- NoE 9 M€;
- CSA 5 M€

**ICT Call 2** (Mai - Juni 2007)

# ICT

## Objective 3.3.2.2: Micro/nanosystems

**Next-generation smart systems:** Major breakthroughs in intelligent sensor and actuator systems complexity, miniaturisation, networking, and autonomy. Micro/nanoscale smart systems with higher performance at lower cost and lower power consumption for specific applications. Energy-management, scavenging and storing techniques. Design and packaging technologies for new sensors, actuators and microsystems, their combination and integration. Innovative devices and integrated systems with very high density mass storage capacity building upon progress in solid-state semiconductors, micro/nanodevices, mechanics, **optics**, electronics and magnetism.

Smart systems are understood as systems able to sense, diagnose, describe and qualify a given situation as well as able to mutually address and identify each other. They are able to interface, interact and communicate with their environment and with other smart systems.

# ICT

## FET - FUTURE AND EMERGING TECHNOLOGIES

- Future and Emerging Technologies (FET) research is long-term and high-risk, but 'purpose driven'.
- Research will consist of radical interdisciplinary explorations of new and alternative approaches towards future and emerging ICT-related technologies, aimed at a fundamental reconsideration of theoretical, methodological, technological and/or applicative paradigms in ICT.
- **FET-Open**

STREP, CA (65 M€)

Open call (fra 6 mars 2007)

# NMP - Nanosciences, Nanotechnologies, Materials and new Production Technologies

## ■ Objective:

Improve the competitiveness of European industry and generate knowledge to ensure its **transformation from a resource-intensive to a knowledge-intensive industry**, by generating step changes in knowledge and implementing decisive knowledge for new applications at the crossroads between different technologies and disciplines. This will benefit both new, high-tech industries and higher-value, knowledge-based traditional industries, with a special focus to the appropriate dissemination of RTD results to SMEs. These activities are concerned with **enabling technologies which impact all industrial sectors** and many other FP7 Themes.

# NMP

- Portable instrumenter for deteksjon, karakterisering og overvåkning av nanomaterialer
- Organiske materialer for elektronikk og photonikk
- Produksjonsteknikk for mikrofabrikasjon

# NMP

- Call identifier: *COOP-NMP-2007-LARGE-1*
  - Date of publication: December 2006    Closure date: - first stage: XXX April 2007
  
- Call identifier: *COOP-NMP-2007-SMALL-1*
  - Date of publication: December 2006    Closure date: - first stage: XXX April 2007
  
- Call identifier: *COOP-NMP-2007-SME-1*
  - Date of publication: December 2006    Closure date: - first stage: XXX April 2007
  
- Call identifier: *COOP-NMP-2007-CSA-1*
  - Date of publication: December 2006    Closure date: - XXX September 2007
  
- Call identifier: *COOP-NMP-2007-ERANETPlus-1*
  - Date of publication: December 2006    Closure date: - XXX September 2007

# NMP

## NMP-2007-4.1.3-1 Specific, easy-to-use portable devices for measurement and analysis

**Technical content / scope:** Risk assessment is based on appropriate characterisation of materials, hazard and monitoring and assessment of exposure. At present, there are few relevant studies on exposure to engineered nanoparticles, but it is believed that the greatest potential for human exposure over the next few years will be in the workplace. Gathering relevant and objective data on real exposure by allowing for background distinction at the workplace for industrial processes (e.g. production of nanoparticles, particularly when present in aerosols) represents a challenge and needs the development of appropriate personal measurement systems. **The objective of the expected collaborative projects would be to develop and validate affordable, portable, adequate sampling and measurement equipments for monitoring working environments (i.e. quantification and characterization of airborne nanoparticles in particular).** These devices and methodologies for routine and non-routine exposure measurements should show an adequate degree of specificity, accuracy, user-friendliness and moderate production costs and produce data suitable for their use in exposure modelling systems.

**Funding scheme:** Large scale integrating projects (IP)

**Specific features:** Additional activities other than research should be included as appropriate, such as safety issues, specific education modules or the analysis of existing and required regulations. The participation of SMEs is encouraged.

**Expected impact:** (i) Safety of new nano-materials and -systems, and of nanotechnology-based products and services; (ii) safe and cost-effective minimisation of the exposure of workers when manufacturing nano-scale entities; (iii) sustainable and responsible development; (iv) support to research and regulation; (v) implementation of the European Commission's Action Plan for Nanotechnology.

# NMP

## NMP-2007-4.2.2-1 Organic materials for electronics and photonics

**Technical content/scope:** Organic materials are starting to release their huge potential in the electronics and photonics industry. New developments in **polymer based electronics and photonics (e.g. flexible display technology and lighting), and related photovoltaic innovations, rely to a large extent on new organic materials development.** Research should focus on enhancing the materials performance and, in particular, on enabling further progress on low cost processing and large area challenges. **Projects should aim at the development of nanostructured organic multifunctional materials with tailored electronic, optical and sensing properties, to be used in applications such as flexible organic devices for electronic labels, electronic paper, optoelectronic devices, light emitting diodes, solar cells, displays and stimuli-responsive materials (sensors and actuators).** In particular, controlling the structure of materials at the nanometer scale is important to increase carrier mobility, spectral (emission and absorption) tuning, interface matching, life-time improvement and reliability. Material processing technologies warranting attention include patterning, multilayering, self-assembly, molecular separation and recognition, vapour growth techniques, selective laser treatment, and deposition at surfaces and interfaces leading to low cost and low temperature solutions (e.g. soft-lithography, dip-pen lithography, self-assembled monolayers and molecular imprinting).

**Funding scheme:** Large-scale integrating projects

**Special features:** Industrial leadership is required.

**Expected Impacts:** Competitiveness of the electronics and photonics industry, for example utilising the potential of roll-to-roll technologies for processing large areas. The development of cost effective organic electronic and photonic devices competitive in performance to alternative technologies is expected. Developments in photovoltaics for energy applications would also bring, for instance, an increase in efficiency and improvement in stability, e.g. by controlling self-thermal degradation.

# NMP

## NMP-2007-4.3.5-2 Production Technologies and equipment for Micro-Manufacturing

**Technical content / scope:** The proposed work should extend the range of microfabrication process capabilities to encompass a wider range of materials and geometric forms, by defining processes and related process chains that can satisfy the specific functional and technical requirements of new emerging multi-material products in the medical/surgical, transport, biotechnology and consumer products sectors. In addition, the compatibility of materials and processing technologies throughout the manufacturing chains needs to be ensured. The research focus should be on developing and characterising high throughput processes for length scale integration (micro/nano) and the manufacture of components and devices with complex 3D features. Example technologies to be investigated either individually or in combination are: **Technologies for direct- or rapid manufacturing; micro-injection moulding; microtooling production, single part manufacturing, energy assisted machining and micro-replication technologies, replication together with methods for qualification and inspection**, and functional characterisation that are integrated into "easy and fast" on-line control systems. Deliverables should include processes which demonstrate significantly higher production rates, accuracy, and enhanced performance/quality, creating capabilities for the serial manufacture of micro components and/or miniaturised parts incorporating micro/nano features in different materials. Processes should also provide a higher flexibility for seamless integration into new micro/nano manufacturing platforms.

**Funding scheme:** Large-scale integrating projects

**Specific features:** Proposals must have a clear industrial involvement and a holistic process chain lifecycle coverage with adaptive applications to different types of products and industrial sectors.

**Expected impact:** The proposed research is expected to show a clear strategic contribution to establishing a European nano- and  $\mu$ -manufacturing industry, enabling the transfer of laboratory scale manufacturing processes to an industrial scale for the cost effective, automated and high quality manufacturing of new products with new features made possible from research in nano- and  $\mu$ -science and -technology.

# Energi

- Solceller:
  - fargestoffsensitivisering
  - bedret energiinnsamling
  - tynnfilmutvikling
  
- Konsentrert solenergi (høytemperatur)
  - Nøkkelpåkomponenter (kollektordesign, speil)
  
- Lav- og middeltemperatur termisk solenergi
  - Kollektordesign og komponenter

# Energi

## ■ Calls

### ■ Call title: Energy Call Part 1

■ *Call identifier:* COOP-ENERGY-2007-1-RTD

■ *Date of publication:* December 2006/ January 2007 (*tbc*) *Closure date:* April 2007 (*tbc*)

### ■ Call title: Energy Call Part 2

■ *Call identifier:* COOP-ENERGY-2007-2-TREN

■ *Date of publication:* December 2006/ January 2007 (*tbc*) *Closure date:* July 2007 (*tbc*)

## ■ European Technology Platforms on

- hydrogen and fuel cells,
- **photovoltaics**,
- biofuels,
- zero emission fossil fuel power generation
- electricity networks of the future
- **solar thermal energy** has also recently been created

# Energi

## ENERGY.2.1: PHOTOVOLTAICS

### Topic ENERGY.2007.2.1.2: Dye-sensitised PV solar cells

**Content/scope:** The aim is to increase the efficiency and stability of dye-sensitised solar cells and to improve their potential for upscaling and fabrication. The activities should cover basic research, e.g. long-term stability, reduction of interfacial recombination and device simulation, as well as applied technology aspects, e.g. interface engineering, optimisation of sensitizer and module design.

**Funding scheme:** Collaborative project (expected to be small-medium size) with a predominant R&D component.

**Expected impact:** The project should increase technical expertise and accelerate the exploitation of this technology.

**Open in call:** COOP-ENERGY-2007-1-RTD

# Energi

## AREA ENERGY.2.1: PHOTOVOLTAICS

### Topic ENERGY.2007.2.1.3: Concentrating photovoltaics: cells, optics, modules

**Content/scope:** The project should address the following aspects: (i) improvement of existing cell materials and develop new materials, in order to increase the cell efficiency, stability and life-time of multi-junction, high-concentration solar cells; (ii) **development of high-efficiency optics with long-term stability and wide acceptance angles, for high concentration and suitable for cost-effective mass production;** (iii) development of dedicated, cost-effective, high-throughput module assembly techniques, with due consideration of durability and temperature issues. Environmental and economical aspects should be fully addressed.

**Funding scheme:** Collaborative project (expected to be larger size) with a predominant R&D component.

**Expected impact:** The results should lead to economically-attractive concentrating photovoltaics, based on higher efficiencies, stable optics and optimised assembly techniques.

**Open in call:** COOP-ENERGY-2007-1-RTD

# Energi

## AREA ENERGY.2.1: PHOTOVOLTAICS

### Topic ENERGY.2007.2.1.4: Research for binary thin-film photovoltaics

**Content/scope:** The aim is to develop cadmium telluride photovoltaic technology by i) advancing the understanding of physical parameters and processes (e.g. material interfaces, influence of impurities and grain boundaries) and ii) improving production technology (e.g. improved ohmic back contact, advanced TCOs, improved nucleation, film morphology and doping). Technical work should be supported by environmental assessments.

**Funding scheme:** Collaborative project (expected to be small-medium size) with a predominant R&D component.

**Expected impact:** The results should lead to more cost-effective and more efficient thin-film modules based on environmentally sound processes and cycles.

**Open in call:** COOP-ENERGY-2007-1-RTD

# Energi

## AREA ENERGY.2.5: CONCENTRATED SOLAR POWER

### Topic ENERGY.2007.2.5.1: Key components for CSP

**Content/scope:** Development of CSP technologies by improving the efficiency, durability and reliability of **key components such as mirrors**, storage systems, driving mechanisms, receivers and heat exchangers. Research may cover new materials, such as innovative coatings, and the use of nanotechnology.

**Funding scheme:** Collaborative project (expected to be small-medium size).

**Expected impact:** Improvements in the performance of key components, in particular at the high end of current temperature ranges, should lead to a substantial reduction in the cost of electricity generation from CSP.

**Other information:** SMEs are important in the innovation process for this topic.  
See also Topic ENERGY.2007.2.5.5

**Open in call:** COOP-ENERGY-2007-1-RTD

# Energi

## AREA ENERGY.4.1: LOW/MEDIUM TEMPERATURE SOLAR THERMAL ENERGY

### Topic ENERGY.2007.4.1.1: Collector design and components

**Content/scope:** In order to address the segments in the temperature range of 80°C to 250°C, solar thermal collectors need to be developed to reach those temperatures with an improved absorption efficiency. **Current materials used in the collectors could be replaced by new ones as e.g. by substituting glass and metals by new generations of plastics. The use of high performing plastics would decrease total cost of the equipment and would favour a more suitable mass production operation.** Future developments need also to be ensured on **cost effective optical coatings** (reflect, transmit, absorb the light in more effective way), self cleaning and glazing materials.

**Funding scheme:** Collaborative project with a predominant demonstration component.

**Expected impact:** Considering the potential of new materials described above, it is expected that significant cost reductions could be achieved as well as higher efficiencies and increased flexibility to use the materials to facilitate the industrial mass production.

**Other information:**

**Open in call:** COOP-ENERGY-2007-2-TREN

# Miljø

## ENV.2007.3.1.3.2. New technologies for waste sorting

Development of new/improved technologies for the sorting process of environmentally and economically important waste material flows (e.g. plastic polymers, WEEEs, etc.). **Implementation of new/improved automatic identification units, e.g. on the basis of X-ray, Near Infra-Red (NIR), TV cameras, etc.** A Life Cycle Assessment study (ISO 14040ff conform), Life Cycle Social analysis and externality/Life Cycle Costing analyses shall be carried out. The LCA studies shall be performed according to ISO 14040ff and the data shall be provided according to data format and quality requirements set up by the European Platform for LCA. This action should foresee the participation of at least 50% (in terms of number of partners and budget) of industrial partners, with a relevant presence of SMEs. Research should include sensors and measuring technologies for the quality assessment of sorted or unsorted fractions related to utilisation (among them material recycling and energy recovery) (**SME-relevant topic**)

**Funding scheme: small or medium-scale focused research collaborative projects**

**Expected impact:** *The improvement of the sorting system should produce a more homogeneous quality of the waste input to the following recovery/recycling processes. This action should contribute to improve the quality and homogeneity of the materials that have to be recovered, recycled or treated, being these key aspects in determining the final output of any waste-related process and the related environmental impacts. In case of thermal treatments for energy production, this should lead to a reduction of deposits and corrosion problems and an increase in energy efficiency. The evaluation of the impact of the proposed projects will be based on the quantitative and qualitative amelioration of the selected fluxes with respect to today's state-of-the-art technologies. The action should lead to strengthening the European industrial competitiveness in.*

**Call: xxxx**

# Transport

## Contents:

- **AERONAUTICS and AIR TRANSPORT**
- **SUSTAINABLE SURFACE TRANSPORT**
- **Galileo (European GPS)**
- **Transport (cross-cutting activities between air and surface transport)**

## Six *Activities* are addressed:

- **The Greening of Air Transport**
- **Increasing Time Efficiency**
- **Ensuring Customer Satisfaction and Safety**
- **Improving Cost Efficiency**
- **Protection of Aircraft and passengers**
- **Pioneering the Air Transport of the Future**

# Transport

- nytt program
- svært overordnede problemstillinger og beskrivelser i utlysningen
- ingen spesifikke optikk calls
- muligheter innen sensorer, vedlikehold, testing, inspeksjon
- spesifikke SME aktiviteter

# Transport

## AAT.2007.3.4.1. Design Systems and Tools

Advanced concepts and techniques in support of a holistic approach to aviation safety, including the development of safety metrics; **development of diagnostic and prognostic systems for incident/accident, flight and maintenance data**; advanced concepts and procedures in support of novel approaches to certification of aeronautical products and operations.

***Funding scheme: Collaborative Projects, Coordination and Support Actions***

# Transport

## AAT.2007.3.4.2. Maintenance

***Advanced concepts and techniques for continuous health and usage monitoring; advanced concepts and technologies to enable ‘smart’ maintenance, including self-inspection and self-repair capabilities.***

***Funding scheme: Collaborative Projects, Coordination and Support Actions***

# Transport

## AAT.2007.4.4.3. Integrated approach to health monitoring and non-destructive evaluation of aircraft structures (Provisional)

**Expected Impact:** The work should provide the European aeronautical industry with a **platform of more accurate, more efficient and readily operational non destructive testing techniques to monitor the health of structures for aircraft and engines** in the view of extending the in-service life of components (i.e. reduce costs) and increase the level of safety.

**Scope:** The approach will consider a large ensemble of non destructive testing techniques. The applications should cover fixed-wing and rotary-wing aircraft as well as engines components. The research and development work will include the assessment and improvement of the accuracy and the robustness of the measurement techniques, consider a sound modelling approach for health monitoring and the detection of defects and, wherever appropriate, aim at developing an automated testing method. The relevant non destructive testing techniques will be applied to products and components covering their full life i.e. after manufacturing, in service and after overhaul. The consortium will demonstrate a high level of integration gathering research centres and universities developing the measurement techniques, the supply chain providing the equipment and the final users i.e. aircraft and engine industry. The final validation shall be performed by tests on aircraft and engines.

**Funding scheme:** Collaborative Projects

# Transport

## SST.2007.4.1.7 Intelligent Road Restraint System (RRS)

The research objective is the integration of the infrastructure restraints in the road safety system, as a component respectful of all road users' needs and with increased capacity for both primary and secondary safety. Integration of communication systems aimed at increasing tertiary safety efficiency can be considered in the novel barrier design.

Activities will address the following subjects:

- Development of an innovative RRS, including anchorage and installation systems, based on novel design and/or materials with enhanced performances for the safeguard of all road users, with particular attention to the protection of motorcyclists and other vulnerable road users;

- Development of sensors and actuators that will increase the RRS's efficiency for primary, secondary and tertiary safety (advanced warning signalling, detection and communication of accidents and other safety related environmental situations);

- Standardisation of RRS's design and optimal lay-out criteria, including related computer modelling.

Expected outcome is the design and development of an innovative road restraint system based on new design and/or innovative materials as an integrated component of the road transport safety system.

# Transport

## SST.2007.4.1.3 Crisis management and rescue operations

Methods, tools and technologies for fast and safe crisis management and rescue operations.

Proposals will cover one or more of the following subjects:

**systems and tools (e.g. decision support systems, sensors and ergonomic signalling systems)** to assist and support control centres, masters, crew, drivers and emergency services handle emergency situations (e.g. evacuation of derailed trains, capsizing vessels involving large numbers of passengers or major highway incidents);

autonomous and remotely-controlled mechanical systems including special tooling for rescue missions;

operational procedures for incidence identification, notification, rescue and rapid resumption of normal operations including the support to new standards.

***Funding scheme: Collaborative Projects, Coordination and Support actions***

# Sikkerhet

- *Security* theme addresses four security **missions**
- Research that will deliver the required **technologies and knowledge** to build up these capabilities

## **Missions:**

1. Security of citizens
2. Security of infrastructures and utilities
3. Intelligent surveillance and border security
4. Restoring security and safety in case of crisis

## **Cross cutting:**

5. Security systems integration, interconnectivity and interoperability
6. Security and society
7. Security Research coordination and structuring

# Sikkerhet

- Observasjon gjennom vann, metall, bakken, etc. (THz)
- Havneovervåking
- Overvåking av åpne grenseområder

De to siste mye datasystemer og bildeanalyse

## ■ Calls

- Call identifier: SECURITY-1-2007
- Date of publication: 15 January 2007 (tentative)    Closure date: 15 April 2007 (tentative)

# Sikkerhet

## Activity 1: Increasing the *Security of citizens*

### Topic SEC-2007-1.3.6 Observation through water, metal, ground etc

**Technical content / scope:** The task is to develop novel technologies and innovative approaches enabling the observation of people, platforms and carriers in complex environments in order to increase surveillance and intervention capabilities. Increasing the surveillance area and performance of future sensor systems should address the lowering of successive obstacles (people, buildings, metal, water, vegetation) that currently inhibit the observation.

**Funding scheme(s):** Collaborative project.

**Call:** Security Research Call 1

# Sikkerhet

## Activity 3: Intelligent surveillance and enhancing border security

### Topic SEC-2007-3.2.1 Main port security system (including containers)

**Technical content / scope:** The task is to create an integrated port security system capable of providing accurate situational awareness and alerting security operators to required interventions, while doing uninterrupted logistics business. The system will improve situation awareness at main ports through the monitoring and tracking of complex port environments as a consequence of the continuous arrival and departure of cargo (containers), ships, vehicles, staff and passengers, and also the potential threats by boats and swimmers etc. **This will include mobile and fixed detection and recognition systems** in order to provide intelligent event detection, supporting the decision control; investigation into cargos scanner outputs fused with shipping manifest information, external risk assessment and a-priori threat knowledge which allows for automatic anomaly detection.

**Funding scheme(s):** Collaborative project.

**Call:** Security Research Call 1

# Sikkerhet

## Activity 3: Intelligent surveillance and enhancing border security

### Topic SEC-2007-3.2.2 Unregulated land borders and wide land surveillance system

**Technical content / scope:** The task is to develop an integrated, adaptable land border and large area (including rough or devastated environments) surveillance system. It will be able to detect and locate (the movements of) individuals, vehicles, and hazardous substances crossing unregulated land borders and, when required, track and trace their movements thereafter. *It will combine novel dedicated remote or autonomous platforms equipped with multi-sensor data acquisition systems (of different types such as chemical and biological) with active imaging (such as radar, infrared, visible).* These data will be further processed and integrated, e.g. including their fusion with navigation information and terrain databases. The capacities offered by the GMES 18 services developed by the *Space* theme will be fully exploited.

**Funding scheme(s):** Collaborative project.

**Call:** Security Research Call 1

# Space - Call title: SPACE-2007-1

- Call identifier: **SPACE.2007**
- Date of publication: early 2007, preferably January
- Closure date: mid May 2007 if call is in January, to be evaluated in June
- Topics called:

Activity/ Area	Topics called	Funding Schemes
<i>[Activity/area number and title]</i>	<i>[Topic number and title]</i>	<i>[Collaborative projects, NoEs, CSAs etc]</i>
<b>9.1.1 Space-based applications at the service of European Society /</b> Integration, harmonisation, use and delivery of GMES data	SPA.2007.1.1.1 Development of upgraded capabilities to existing FTS and related (pre)-operational services	Collaborative Projects
	SPA.2007.1.1.2 Developing pre-operational GMES pilot services in new application fields *	Collaborative Projects
<b>9.2.1 Strengthening of Space foundations/</b> Research to support space science and exploration	SPA.2007.2.1.1 Space Science	Collaborative Projects
<b>9.2.2 Strengthening of Space foundations /</b> Research to support space transportation and key technologies	SPA.2007.2.2.1 Space technologies	Collaborative Projects, Coordination and Support Action
	SPA.2007.2.2.2 Space transportation	Collaborative Projects
<b>9.3.1 Cross-cutting activities/</b> Cross-border cooperation and ERA-NET	SPA.2007.3.1.1 ERA-NET for GMES	ERA-NET (plus)

–Evaluation procedure: It is foreseen to use both remote and Brussels-based external proposal evaluation procedures. Further to this, no special conditions are applicable to this theme.

–Indicative evaluation and contractual timetable:

This call in 2007 invites proposals to be funded in 2007 and 2008. The evaluation is to be carried out within 2 months of the call deadline, with negotiations of successful proposals commensurate with the 2007 budget expected to be done in the latter half of 2007.

N.B. The remaining successful proposals not funded from the 2007 budget will be carried over to be negotiated in early 2008.

# Space - Call title: SPACE-2007-1

## ■ Indicative budget allocated to the activities

(budgets are available for other activities if not consumed):

- Activity 9.1 Space-based applications at the service of European Society
  - 1 Development of upgraded capabilities to existing FTS and related (pre)-operational services ~79M€
  - 2 Developing pre-operational service capabilities in new application fields ~18M€\*
  
- Activity 9.2 Strengthening of Space foundations ~27M€\*
  
- Activity 9.3 Cross-cutting activities (ERA-NET) ~ 4M€\*
  
- Other activities Access to Earth observation and in-situ monitoring data
  - 1 Space-based data (ESA) ~46M€\*
  - 2 RSFF 4.6M€
  - 3 horizontal support of Cordis, ERA-NET, COST and EUREKA 11.5M€

○ There !

Where are € for Photonics ?

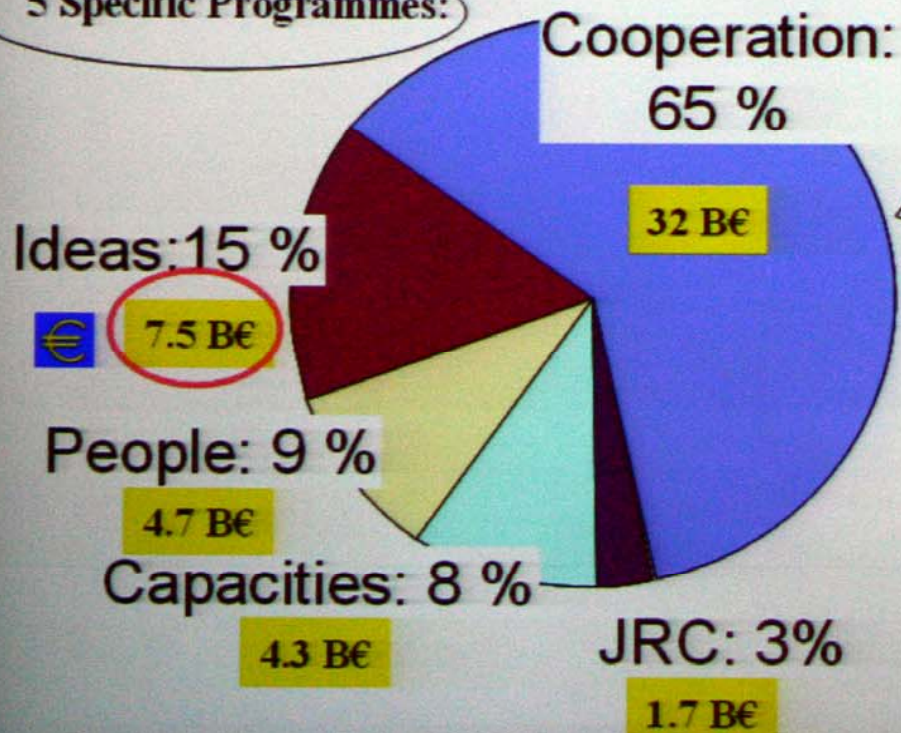


2007 - 2013

Budget: 50.7 B€

10 Themes

5 Specific Programmes:



ICT  
Information and  
Communication



9.12 B€

NMP  
Nanosciences,  
Nanotechnologies,  
Materials & new  
Production Technologies



3.5 B€



(Space, Security...)

European Commission  
Information Society and Media

