



# FP7 for production technologies

## Opportunities in 2008/09

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## Industrial Technologies

Light high-performance composites	
Call ID	FP7-NMP-2009-LARGE-3
Topic ID	NMP-2009-2.5-1
Content	<p>Novel light-weight high-performance composites, which enable a significant decrease in weight whilst providing a top performance as compared to existing materials, or even a clear improvement in mechanical properties such as increased specific strength, specific stiffness, damage tolerance, ductility, creep and wear behaviour and fracture toughness, are essential for innovation in the transport sector. Lighter but stronger transportation vehicles will be more economical and environment-friendly, by consuming less fuel and emitting less CO<sub>2</sub>. In some cases improved damping and enhanced crash/impact absorption capabilities, as well as embedded sensing and self-healing properties, are also sought.</p> <p>Research should only target radical advances in new light-weight high performance composite materials (i.e. avoiding purely incremental improvements) and should be based on understanding the relationship between composition, processing, microstructure and properties, in particular using advanced engineering and modelling tools. Different types of light-weight composites relevant to the same application field (e.g. automotive, aerospace) can be studied together. Attention should also be paid to the life cycle analysis and to the cost-effectiveness of the new composite materials in comparison to the materials currently used.</p>
Expected impact	Clear benefit to the land transport, maritime and aeronautic sectors, as well as in moving components of large machinery, with regard to lower fuel consumption, increased competitiveness, protracted usage/life cycle with less consumption of resources, improved safety. Lower carbon dioxide emission in line with European policy objectives.
Other information	In order to ensure industrial relevance and impact of the research effort, the active participation of industrial partners represents an added value to the activities and this will be reflected in the evaluation and priority will be given to proposals showing a clear industrial leadership.
Funding scheme	Large-scale integrating Collaborative Projects.
Indicative budget	€20 million
Evaluation procedure	Two stage evaluation
Deadline	17 February 2009; 17:00h

<b>Adaptive control systems for responsive factories</b>	
Call ID	FP7-NMP-2009-SMALL-3
Topic ID	NMP-2009-3.2-2
Content	<p>One of the main strategic goals for the development of the manufacturing industry is the implementation of intelligent factories, which are able to manage complex and variant production processes. Distributed multi agent manufacturing technologies will characterise the next generation of the European factories. These systems will involve autonomous re-configurable and collaborative intelligent units capable of self-adapting to different production operations due to planned changes as well as unforeseen variations in both process parameters and variables. As a result, smaller losses of operational time due to planned changes in the process, and changes predicted through progress monitoring should be achieved, and optimal operation should be maintained despite varying conditions. Furthermore, the methodology should have the potential to be applied in different sectors.</p> <p>The emphasis is on factory level control, though the interface to machines/devices is included in the scope in order to ensure a homogenous system. Research should specifically focus on adaptive control systems for intelligent factories, including the following main development issues and targets:</p> <ul style="list-style-type: none"> <li>- modularity of architectures and new flexible and reconfiguration strategies to be applied to production systems. This aspect is a prerequisite for the new generation of scalable, self-adaptive and interoperable control systems;</li> <li>- increase of flexibility and performance of knowledge-based processes and automation enabling new agile manufacturing operations. Such features contribute to build new production processes which are able to adapt to new productive targets and needs with a low impact in terms of costs, development, set-up and ramp-up time;</li> <li>- multilayer, interconnected distributed adaptive control systems – adapting to parametric changes in the manufacturing process and providing optimal control for discrete or continuous processes;</li> <li>- multi-agent automation and supervision software that will improve distributed intelligence solutions, optimally incorporating human input.</li> </ul>
Expected impact	Introduction of autonomous, collaborative and self-adaptive control in production is expected to show significant improvement in factory productivity. In cases of large variations/uncertainties in process parameters; and/or in cases of frequent managed changes in the production, there is potential for as much as a 20 – 30 % improvement in efficiency, accompanied by greater equipment up-time of up to 90%.
Other information	In order to ensure industrial relevance and impact of the research effort, the active participation of industrial partners represents an added value to the activities and this will be reflected in the evaluation. The following issues will also be reflected in the evaluation: (i) to ensure wide industrial impact, proposals are expected to include component manufacturers and Original Equipment Manufacturers (OEM) for future take-up of the new technologies; (ii) proposals are expected to take into account relevant standardisation and interoperability issues as well as further take-up measures in collaboration with Eureka initiatives (i.e. Pro-Factory).
Funding scheme	Small or medium-scale focused projects.
Indicative budget	€10 million
Evaluation procedure	Two stage evaluation
Deadline	17 February 2009; 17:00h

<b>Automation and robotics for sustainable crop and forestry management</b>	
Call ID	FP7-NMP-2009-LARGE-3
Topic ID	NMP-2009-3.4-1
Content	<p>The majority of processes entailed in the management of crops are implemented uniformly to whole fields or to all the harvested material. This can result in excessive use of pesticides and other inputs, unnecessary contamination of the environment, sub-optimal crop performance, and excessive time and energy requirements. In crop and forestry management, competitiveness requires increasing automation in sorting and harvesting, whilst increasing the respect for sensitive key biotopes and biodiversity requires a more discriminate process.</p> <p>Robotic concepts and other approaches to automated crop and forestry management are now beginning to demonstrate the potential to address these issues. The target systems are predominantly biological in nature and operate in the natural environment, which means that there are many novel issues to address if automated processes are to be effective in practice - of particular importance is the variability of the processes in time and space. Targets (stems, fruit etc) and obstacles vary in size, shape, surface texture, orientation and colour, and operations need to be adapted to the challenging open-air environment so that they are resilient to changes in illumination, humidity, temperature etc. Safety considerations and fail safe technical solutions will be important particularly for robot systems that have significant autonomy from other farm operations, or are even 'free-acting'. Although developments in other sectors will provide valuable inputs and transferable technology, there are still major research challenges to overcome in order to establish innovations that have the potential for significant market penetration. Research should focus on the following main development issues and targets:</p> <ul style="list-style-type: none"> <li>- novel (or transferable) sensors to detect presence and location of biological entities, stage of plant development or quality/chemical characteristics of plant or soil;</li> <li>- effectors and actuators to apply inputs precisely or manipulate objects physically;</li> <li>- control models and routines to deliver precise actuation in a variable environment at a speed that is cost effective for crop/forestry management;</li> <li>- architecture, interfaces, communications etc that permit effective real time operation and control and provide information for record-keeping and to optimise current and future operations</li> </ul> <p>In order to deliver real progress in this area, with potential for major practical impact, an integrated approach across disciplines (horizontal) and down the supplier chain (vertical) is necessary. The cross fertilisation concept from different fields of application should be encouraged. It will be necessary to identify and focus work around demonstrator systems that allow new technologies to be evaluated in contexts that are meaningful to the agronomic/forest user and thus can open up the necessary vertical integration. Aspects that relate to the delivery of regulatory requirements and/or traceability are also likely to encourage rapid penetration of these new technologies.</p>
Expected impact	New technologies to enhance the precision and automation of crop management could lead to reduction in harvesting costs by 15-35% and 20-30% reduction in the use of crop protection chemicals in the next 5-7 years, and to increased quality and marketability of harvested produce, assuring the maintenance of the world-leading position of the European forestry and agricultural machinery industry in a world market. Moreover, they could lead to the creation of high technology jobs within the agricultural sector that will contribute to sustaining available income in rural areas.
Other information	A much larger impact can be achieved by involving machinery manufacturers, companies (including SMEs) with specific expertise in sensors, robotics and control in complex environments, farmers, forestry owners, end-users of crop/forestry related products and other stakeholders. Proposals should contain significant demonstration and training activities.
Funding scheme	Large-scale integrating Collaborative Projects.
Indicative budget	€20 million
Evaluation procedure	Two stage evaluation
Deadline	17 February 2009; 17:00h

<b>Holistic and integrated approach to high-performance, reliable and adaptive machine tool design and production</b>	
Call ID	FP7-NMP-SME-3
Topic ID	NMP-2009-3.4-2
Content	<p>Because of the demand for customised products with short delivery times, business must shift from designing and selling physical products to supplying a system of products and services that are jointly capable of fulfilling users' demands, while also reducing total life-cycle costs and environmental impacts. The machine-tool and production systems industrial sector should base its industrial transformation in the future on its capacity to propose, through a holistic approach in the global market, high added value products and services in which the product is not the machine tool itself, but a capacity of safe production at the best total-life-cycle impact and cost.</p> <p>The research should focus on a holistic approach to machine tool design, production and use, with complete integration of machine and processes, taking into account improved quality, predictability and cost efficiency. This involves the development of:</p> <ul style="list-style-type: none"> <li>- fast, usable, robust and affordable digital design and manufacturing tools for conceptual system design;</li> <li>- a design environment for new machine-tool concepts, with intelligent links to machining process and product simulation (including animation); approaches for handling the complexity of integration of heterogeneous methodologies and tools with local procedural and data management within the design environment;</li> <li>- new business models and dynamic networking aiming at total life cycle cost optimisation by codesign,</li> <li>- considering also environmental and robustness issues, in order to implement the new technologies into the specific business environment of SMEs</li> </ul>
Expected impact	<p>Contribution towards new business models in the European machine tool and machining industry. More specifically, the combination of new business models and the proposed technical developments should result in an ambitious quantified impact whereby: Towards a 100% recycling of machine materials and reusing of machine components; Energy consumption is reduced by 30-40%; Productivity is increased, through reduced cycle time and increased active robustness, by 3-5 times; Reliability of high precision processes and machine tools is increased by 50%; Process transparency is higher by 100% through extension of the human/ machine interface capability; Machine design and build lead time to market is reduced by 50%.</p>
Other information	<p>The following issues will be reflected in the evaluation: (i) proposals are expected to include significant demonstration elements applying the design environment in real-life case studies including the construction of a demonstrator; (ii) apart from the technical developments, the proposal Impact assessment will consider new business models and dynamic networking in the European machining industry; (iii) this topic is well suited for international collaboration, in particular within the IMS scheme regarding energy efficiency, environmental and industrial safety issues.</p>
Funding scheme	SME-targeted Collaborative Projects.
Indicative budget	€10 million
Evaluation procedure	Two stage evaluation
Deadline	17 February 2009; 17:00h

Reducing the environmental footprint of energy intensive industries	
Call ID	FP7-NMP-2009-LARGE-3
Topic ID	NMP-2009-4.0-4
Content	<p>Process Industries and in particular Energy Intensive Industries (EII) still consume very high quantities of natural resources and energy and produce huge amount of waste and harmful emissions. EU Directives such as End of Life (ELV), Waste Electrical and Electronic Equipment (WEEE), waste directives, Integrated Pollution Prevention and Control (IPPC), the Energy Intensive Industries (EII) initiative and the EU Action Plan on Sustainable Consumption and Production (SCP) are all requesting efforts to alleviate these drawbacks. The overall objective is to achieve radical improvements in both the competitiveness and the environmental performance of energy intensive industries (e.g. non-ferrous metals, pulp and paper, cement, glass and ceramics industries - as this call is a part of a multi-annual strategy, the chemical, petrochemical and/or iron and steel sectors are not addressed specifically to avoid overlaps with running activities covered by specific calls) by developing more cost efficient and eco efficient processes and technologies in a multi-sectoral context. Health and safety issues related to the new process should be addressed.</p> <p>The developed new processes will not necessarily produce the same materials/products as the conventional processes. Research is needed not only in the development of these new processes but also in the development of the new materials that they will produce.</p> <p>The research should aim at developing new more cost and energy efficient routes and technologies for eco-efficient products contributing to the CO2 reduction goal with:</p> <ul style="list-style-type: none"> <li>- new or modified reactors and furnace design,</li> <li>- use of less energy intensive or recycled materials as feedstock,</li> <li>- use of renewable and alternative energy resources, like bio-based resources and secondary materials,</li> <li>- the technical scope includes the development and optimisation of materials and the use of these based on understanding of micro/nano scale processes,</li> <li>- heat, water and other media recovery, as well as advanced solid, liquid and gaseous waste management,</li> <li>- better process control</li> </ul>
Expected impact	New cost-efficient technologies and processes will target: energy efficiency increase higher than 20%, reduction of emissions of CO2 and other greenhouse Gases (GHG) higher than 20%, feedstock savings higher than 20%, operating cost reduction of at least 10%, productivity increase of at least 10%.
Other information	In order to ensure industrial relevance and impact of the research effort, the active participation of industrial partners, a clear industrial leadership and a multisectoral approach to CO2 abatement represent an added value to the activities and this will be reflected in the evaluation. Large-scale demonstration of the new processes and materials is needed to increase the exploitation potential.
Funding scheme	Large-scale integrating Collaborative Projects.
Indicative budget	€20 million
Evaluation procedure	Two stage evaluation
Deadline	17 February 2009; 17:00h

<b>Innovative and knowledge-based tooling industry</b>	
Call ID	FP7-NMP-2009-SME-3
Topic ID	NMP-2009-4.0-5
Content	<p>Innovation, technological development and optimisation of the overall manufacturing system strongly depends on innovations and developments in moulds, dies and tools. Having interfaces to the final parts (products and components) and production equipment (such as, machine-tools), the tool is in the core of the production system, determining its efficiency and robustness. Their cost and time-to-customers as well as their quality and reliability are key competitive factors which, directly or indirectly, have a structural and horizontal strategic effect in the sustainability of the European industrial competitiveness. The topic focuses on creating the foundations for knowledge-based engineering capacity in the European tooling industry, based on in-depth understanding of the tooling engineering requirements and driven by application-oriented failure modes, end-of life assessment and added value product manufacturing.</p> <p>Research results should include:</p> <ul style="list-style-type: none"> <li>- new organisational models, including distributed engineering and manufacturing systems and ad hoc business models, for shortening time-to-customers, being more cost effective and providing added-value services to the developing holistic and integrated European manufacturing approach;</li> <li>- enhancement of virtual and numerical based simulation aid as an essential resource in the product development phase to ensure capability and robustness of manufacturing processes to reduce amount of down-time;</li> <li>- development of digital mould and die design, production and verification processes, coupled with innovative tailored solutions using new functional materials, innovative manufacturing and quality control approaches and advanced surface finishing engineering for optimised operational parameters;</li> <li>- integration of safety at the design stage, aiming at inherent safety and minimisation of impacts on workers and the environment.</li> </ul> <p>Industrial sectors to be targeted range from manufacturing of micro-applications to large devices and from "one-of-a-kind" and small series to large scale and massive production.</p>
Expected impact	<p>Intensive R&amp;D in specific fields of tooling-making processes has a direct effect on the sector itself, promoting its migration from a resource based industry to a knowledge-intensive engineering service provider, and a multiplying effect as an enabler for the development, innovation and sustainability of the European manufacturing industry as a whole. The impact of the development should be measured with regard to both advanced engineering capacity (increasing investment research &amp; development activities within the SMEs by 10-15%, increasing number of partnerships between industries and universities/research institutes by 15-20%) and business performance (stable or up to 5% increasing employment potential, stable growth of the world market sales share, recognised world leadership in 5-10 well-identified advanced technological sectors) in the tooling industry in Europe.</p>
Other information	<p>The following specific requirements will be reflected in the evaluation: (i) proposals are expected to include significant demonstration elements; (ii) apart from the technical developments, the proposal Impact assessment will consider the contribution towards new business models, networking and technological partnerships for extended services throughout the tools' useful life.</p>
Funding scheme	SME-targeted Collaborative Projects.
Indicative budget	€10 million
Evaluation procedure	Two stage evaluation
Deadline	17 February 2009; 17:00h



## Information and Communication Technologies

Cognitive Systems and Robotics (i)	
Call ID	FP7-ICT-2009-4
Topic ID	ICT-2009.2.1 a) + b)
Content	<p>a) New approaches towards understanding and solving key issues related to the engineering of artificial cognitive systems. Among these issues are the following:</p> <ul style="list-style-type: none"> <li>- representation / categorisation / recognition / interpretation of objects, events, situations, behaviours and affordances in realistically scaled real-world environments;</li> <li>- the role and implementation of memory and learning in artificial systems;</li> <li>- adaptive and anticipatory behaviour within incompletely specified environments;</li> <li>- goal-setting and strategies for achieving goals;</li> <li>- collective behaviour arising from the interplay of (possibly large numbers of) individual subsystems;</li> <li>- modelling and design of (multimodal) interaction, communication and collaboration.</li> </ul> <p>Projects are expected to demonstrate measurable progress on a suitable mix of these issues.</p> <p>b) New approaches towards endowing robots with advanced perception and action capabilities, and towards developing pertinent benchmarks and tests. Of particular interest are:</p> <ul style="list-style-type: none"> <li>- 3D sensing for everyday objects and environments;</li> <li>- motion and affordance perception;</li> <li>- learning and control strategies for linking perception and action;</li> <li>- benchmarking with a focus on navigation and autonomy.</li> </ul> <p>Projects are expected to demonstrate measurable progress on at least one of these issues.</p>
Expected impact	Leading-edge research capacity in Europe in cognitive systems engineering and robotics. Innovations in service robots, and industrial production and manufacturing processes. Widespread comparative assessment of robot performance (for different tasks and technologies). New market opportunities, and technologies for increased productivity and efficiency in EU industries.
Other information	-
Funding scheme	Collaborative project
Indicative budget	€26 million
Evaluation procedure	One stage evaluation
Deadline	1 April 2009; 17:00h

Cognitive Systems and Robotics (ii)	
Call ID	FP7-ICT-2009-4
Topic ID	ICT-2009.2.1 c) + d) + e)
Content	<p>c) New ways of designing and implementing complete robotic systems that operate largely autonomously in loosely structured dynamic environments and, where necessary, in close co-operation with people. Systems may be distributed and should integrate rich sensory-motor skills (for example, grasping, manipulation, locomotion) with high level cognitive competencies (for example, reasoning, planning and decision-making). As appropriate, they should be demonstrably more robust, dependable, flexible and adaptive, and safer than it is possible today, and improve their performance through learning.</p> <p>d) New, scientifically grounded system architectures integrating communication, control, and cognitive capabilities to enable meaningful and self-sustaining autonomous action in real-world environments, natural interaction with people (where necessary), robust adaptation to changing operating conditions, and self-improvement. The viability and scalability of these architectures will be demonstrated through suitable experiments based on physical implementations and/or simulations of complete systems.</p> <p>e) A framework to facilitate cross-fertilisation between academic and industrial research efforts in robotics through widespread experimentation with industry-strength platforms in academic research labs and through the joint definition of longer term scenarios and requirements to direct robotics research towards common goals; to assure a comparative assessment of performance through definition of suitable metrics and through benchmarking (supported by competitions or otherwise).</p>
Expected impact	<p>Integrated and consolidated scientific foundations for engineering cognitive systems under a variety of physical instantiations. Significant increase of the quality of service of such systems and of their sustainability in terms of, for instance, energy consumption, usability and serviceability, through the integration of cognitive capabilities. Innovation capacity in a wide range of application domains through the integration of cognitive capabilities. Improved competitive position of the robotics industry in existing and emerging markets for instance in the following sectors: flexible small scale manufacturing; professional and domestic services; assistance and rehabilitation; construction, maintenance and repair; urban search and rescue; exploration and mining; entertainment, education and training. Consensus by industry on the need (or not) for particular standards. More widely accepted benchmarks. Strengthened links between industry and academia.</p>
Other information	-
Funding scheme	Collaborative project
Indicative budget	€39 million
Evaluation procedure	One stage evaluation
Deadline	1 April 2009; 17:00h

Flexible, Organic and Large Area Electronics	
Call ID	FP7-ICT-2009-4
Topic ID	ICT-2009.3.3 a) + b)
Content	<p>a) Flexible, organic and large area electronic devices and building blocks. Co-development of processes and materials for the fabrication of electronic devices, which have one or more of the following features: organic (including in combination with inorganic); flexible; heterogeneous; large-area. This includes materials, deposition methods and multiple-layer interfacing on single device architectures, including modelling, manufacturing and characterisation, as well as process-tolerant design for many-device functional blocks. Reliability, environmental and recycling issues should also be considered. Specific issues to be addressed include: device architecture and performance, device passivation/stability; highly productive in-line compatible processes capable of very small feature size and multi-layer registration; correlation between electronic material properties, process parameters and device performances; combination of manufacturing modes (substrate carrier, sheet to sheet, roll to roll, organic/inorganic process combinations), large area manufacturing. Device demonstrators include: logic and analogue circuits with n and/or p type Thin Film Transistors (TFTs), power converters, batteries, memories, sensors, active RFIDs.</p> <p>b) Flexible or foil-based systems using the building blocks based on organics, inorganics or their combination, homogeneous process integration of different functionalities complemented by heterogeneous component integration and 3D functional foil integration through their combination with flexible / stretchable / textile substrates and interconnects to thin film discrete devices and thinned ICs. Specific issues to be addressed include: one step foil lamination/interconnect, vias, foil passivation; multi-foils system design and integration; standardisation of foils' functionalities and lay-outs, reliability, low energy consumption, transparent electronics. Device demonstrators (e.g. e-paper, e-cards) include: autonomous systems with energy scavenging and storage able to provide several functionalities like user input, physical/chemical/bio-sensing, signal processing, radio transmission &amp; receive, signage.</p>
Expected impact	Reinforced leadership position of Europe in the creation of flexible or large area electronics tailored to meet key societal and economic needs. Sustainable electronic device performance and manufacturing costs matching low capital investment requirements and new market opportunities. Contribution to the evolution of traditional industries in the EU, such as printing and clothing industries, towards the e-media revolution.
Funding scheme	Collaborative project
Indicative budget	€54.5 million
Evaluation procedure	One stage evaluation
Deadline	1 April 2009; 17:00h

<b>ICT &amp; Ageing</b>	
Call ID	FP7-ICT-2009-4
Topic ID	ICT-2009.7.1 a)
Content	Service robotics for ageing well: Integration and adaptation of modular robotic solutions that are seamlessly integrated in intelligent home environments and adaptable to specific user requirements for support to elderly people and their carers. These robotic solutions should undergo operational verification in real user environments. Examples of applications include support for daily living and care activities in the home. Work should be driven by ambitious, yet realistic usage scenarios with a potential to demonstrate a substantial increase in efficiency of care and independence of elderly people. Major challenges to be addressed include autonomous self-learning robotics solutions, sharing of contextual information with other artefacts in the surroundings of the user, navigation in unknown environments, precise manipulation of relevant objects and user robotic interaction taking into account the usability requirements of elderly people. The proposed R&D should cover all relevant aspects to allow for a full operational validation, including user acceptance, adequate safety, reliability and trust as well as ethical considerations.
Expected impact	Increased efficiency of care and prolonged independence and quality of life of elderly people and their carers.
Other information	It is not intended to support development of basic robotics components.
Funding scheme	Collaborative project
Indicative budget	€12 million
Evaluation procedure	One stage evaluation
Deadline	1 April 2009; 17:00h

## Energy and Environment

Energy efficiency in energy intensive industry	
Call ID	FP7-ENERGY-2009-2
Topic ID	ENERGY.2009.8.1.1
Content	Innovative solutions for significant improvement of energy intensity and CO2 intensity of the processes or reduction of energy and energy embedded in products in the energy intensive manufacturing industry (such as for example iron and steel; non-metallic minerals; chemical and petrochemical; glass and ceramics, paper and pulp and others). Innovative solutions for overall site/facility management and optimisation through energy and product management systems (use of existing EMS tools). Site optimisation integrating several industries or processes (e.g. petrochemical or chemical complexes; industrial parks, etc.) is considered as bringing added value to the project. Proposals could include CHP and district heating/cooling systems exchanging waste heat and cold between buildings and processes with overall monitoring and optimised planning or establishment of ESCOs for site optimisation.
Expected impact	To move to low carbon manufacturing processes or site/facility management.
Other information	The active participation of key industrial partners is essential to achieving the full impact of the project. This will be considered in the evaluation. The guidelines for demonstration projects figure in the guide for applicants. Up to two projects may be funded.
Funding scheme	Collaborative project
Indicative budget	€10 million
Evaluation procedure	One stage evaluation
Deadline	29 April 2009; 17:00h

<b>Adaptation of water supply and sanitation systems to cope with climate change</b>	
Call ID	FP7-ENVIRONMENT-2009-1
Topic ID	ENV.2009.3.1.1.1
Content	The objective of this topic is to increase the technological capacity and performance of traditional water supply and sanitation systems (sewerage systems – including combined sewer overflows - and waste water treatment plants, dams, reservoirs, irrigation systems, etc.) in the context of expected increase of the frequency and severity of extreme events. This should include research to improve the current limitations and enhance the capability of existing measuring and forecasting technologies, as well as new design, monitoring, modelling and control system integration, overall on-line optimisation – also considering optimisation of energy requirements -, further development of promising control strategies, and decision support systems. This topic is open to international cooperation, since adaptation to climate change is an issue of global concern. It is viewed that the active participation of relevant international cooperation partners should add to the scientific and/ or technological excellence of the project, and/ or lead to an increased impact of the research to be undertaken; this will be considered by the evaluators. Project consortia should include a relevant participation of industrial partners, SMEs, and appropriate end-users (i.e. water utilities).
Expected impact	Improved rainfall monitoring. More advanced, reliable and cost effective technological solutions, in order to help decision makers to undertake immediate and longterm effectiveness of system adaptation and management actions and to design appropriate environmental planning and optimal investment strategies at the urban development scale, in line with the requirements of various water related and climate change adaptation EU policies. Efficient transport and temporary storage of wastewater in combined sewer systems protecting downstream treatment plants leading to an overall reduced environmental impact caused by heavy rainfalls in urban areas. Strengthening the European industrial competitiveness in this field.
Other information	-
Funding scheme	Collaborative Project (large scale integrating project)
Indicative budget	€7 million
Evaluation procedure	One stage evaluation
Deadline	8 January 2009; 17:00h

## Small and medium-sized companies

<b>Research for SMEs</b>	
Call ID	FP7-SME-2008-1
Topic ID	-
Content	Research for SMEs is a bottom-up scheme: the projects may address any research topic across the entire field of science and technology.
Expected impact	<p>Projects under 'Research for SMEs' aim at strengthening the competitiveness of SME participants and contribute at programme level to improving industrial competitiveness across the European Union. The proposed Science &amp; Technology approach should take into account the state of the art in the technology domain and demonstrate the capability and commitment of the consortium to implement a tangible RTD work plan at a high quality level.</p> <p>The expected outcome post project includes new/improved products, processes or services with a distinct market potential: they should demonstrate a clear economic impact for the SME participants, improving their competitiveness by creating new or expanding existing markets. Collaboration and networking at EU level should enhance their access to markets and customers.</p>
Other information	Research for SMEs supports innovative SMEs to solve common or complementary technological problems. Projects must be centred on the innovation needs of the SMEs, which outsource research to RTD performers and must demonstrate a clear exploitation potential for the SMEs concerned.
Funding scheme	Collective research
Indicative budget	€93 million
Evaluation procedure	One stage evaluation
Deadline	29 April 2009; 17:00h

<b>Research for SME Associations</b>	
Call ID	FP7-SME-2008-2
Topic ID	-
Content	Research for SME Associations is a bottom-up scheme: the projects may address any research topic across the entire field of science and technology.
Expected impact	<p>Projects under 'Research for SME Associations' aim at developing new or conforming to existing European norms and standards, meeting regulatory requirements and policy objectives in areas such as health, safety and environmental protection or solving technological problems common for larger groups of SMEs that could not be addressed under 'Research for SMEs'. The proposed Science &amp; Technology approach should take into account the state of the art in the targeted technology domain and demonstrate the capability of the consortium to implement a tangible RTD work plan at a high quality level.</p> <p>Projects should lead to a clear economic impact for the SME members of the SME-AGs involved in the project, thus contributing at programme level to improving industrial competitiveness across the European Union.</p>
Other information	Research for SME Associations supports SME associations to develop technical solutions to problems common to a large number of SMEs in specific industrial sectors or segments of the value chain through research, for example, to develop or conform to European norms and standards, and to meet regulatory requirements in areas such as health, safety, environmental protection and energy efficiency. Projects must be driven by the SME associations, which outsource research to RTD performers for the benefit of their members and must involve a number of individual SMEs.
Funding scheme	Collective research
Indicative budget	€79 million
Evaluation procedure	Two stage evaluation
Deadline	18 December 2008; 17:00h