Agricultural Engineering and Technologies

Excerpt of FP 7 Working Programme 2007

Calls with relations to AET

Version from 24 Jan 2007

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Preface

In the European sector of Agricultural Engineering and Technologies, the AET Working Group was established to ensure a reasonable number of AET research and development topics in the newly launched 7th Framework Programme of the European Commission (FP7). Since last year this group has been acting under the umbrella of the European Technology Platform MANUFUTURE.

At the end of 2006 the first calls for the submission of proposals in the 7th Framework Programme of the European Commission were published. Several specific programmes are defined. The programme „Cooperation“ includes different calls, which are classified into 10 priorities. Those priorities cover a wide range of research in Europe.

For Agricultural Engineering Technologies, a lot of possibilities in several priorities are given to apply for projects or to collaborate in consortia. Opportunities for research collaboration of industrial companies and research institutes in the field of AET can be seen especially in the priorities “Food, Agriculture and Fisheries, and Biotechnology“, ICT, NMP, Energy, Environment and Transport.

The AET working group has analysed the calls and identified those which are more or less related to Agricultural Engineering and Technologies. These topics are compiled as a summary in this document. All calls and further information in several languages can be found on the EU webpage http://cordis.europa.eu/. For detailed information about FP7 it is recommended also to contact the national contact points.

Source

Complete work programmes and further information are available under:
http://cordis.europa.eu
http://cordis.europa.eu/fp7/dc/index.cfm
http://cordis.europa.eu/fp7/get-support_en.htm

1. THEME 2
FOOD, AGRICULTURE AND FISHERIES, AND BIOTECHNOLOGY

This work programme describes the research topics for the calls for proposals launched in December 2006 and May 2007. It provides, for each topic, a description of the technical content and scope of the research, any specific participation requirements (if appropriate) andthe related expected impact. Two main calls will be open in 2007: The first call (Call 1) will use the 2007 budget and, for the second call (Call 2A) it is planned to use part of the 2008budget*s*. The remaining 2008 budget will be used for Call 2B, which will be published in the2008 work programme. The titles of indicative topics for Call 2B are given in this work programme for information only – *please note that the content for call 2B will be reviewed during the preparation of the next work programme and these indicative topics may be amended or deleted, and new topics may be added.*

There will be a strong focus in Call 1 on (i) small collaborative projects, (small or medium scale focused research actions) where needs in terms of competitiveness or policy support are more tangible and targeted and where clear impacts can be achieved through shorter term projects, and (ii) on small preparatory actions (Coordination & Support Actions – CSA), which will, *inter alia,* identify and lay the ground for priority actions in later calls**.**
All proposals, including large collaborative projects, (large scale integrating projects) and Networks of Excellence, will be evaluated under the one-stage procedure in Call 1.

Call 2A covers exclusively large collaborative projects and Networks of Excellence, which will be evaluated through a two-stage submission procedure.

Small collaborative projects ("small or medium-scale focused research actions") are projects with a requested Commission contribution up to € 3 million[10], large collaborative projects ("large-scale integrating projects") and Networks of Excellence between € 3 million and € 6 million and Coordination and Support Actions (CSA) up to € 1 million.

It is important to note that the above mentioned funding thresholds will be applied as eligibility criteria and that the proposals not fulfilling these thresholds are considered as ineligible.

II CONTENT OF CALLS IN 2007

Activity 2.1: Sustainable production and management of biological resources from land, forest and aquatic environments

Area 2.1.4 Socio-economic research and support to policies

KBBE-2007-1-4-02: Enabling efficient transfer of technology in the knowledge-based bio-economy

Call: FP7-KBBE-2007-1

The aim of this topic is to propose a coordinated effort aiming at raising awareness and carry out dissemination activities and advice among the research institutions and academia, in particular with regard to issues such as Good Laboratory Practice (GLP), the development of ideas to the proof-of-concept stage and Intellectual Property Rights (IPR). In addition, the project will develop and establish a Europe-wide system to identify innovation and enhance the transfer of knowledge to commercial companies for further development and will establish criteria for the selection of innovative ideas for such development. The intellectual property situation should be taken into account to build innvoation and ensure effective utilisation of know-how amongst all stakeholders.

Funding scheme: Coordination and support action aiming at supporting the KBBE

Expected impact: The project will develop and establish a Europe wide system in the different fields of the KBBE in order to identify innovation and enhance the transfer to commercial companies for further development and commercial exploitation. It will also establish the criteria for the selection of innovative ideas and further development, and, in the long term, will increase competitiveness of the European industry.

KBBE-2007-1-4-03: The farm of tomorrow

Call: FP7-KBBE-2007-1

The "farm of tomorrow" will take account of Europe's ecological and cultural diversity, will be non-uniform, will built on technological, social and economic innovations and a variety of research outputs. The specific main issues facing the farm of tomorrow are: New models of farm material flow management, based on on-farm or local integration of environmentally friendly closed-cycle processing facilities (energy, food/non-food raw materials, bio-refining). Energy efficient cultivation with light machinery (avoiding soil compaction), precision farming, and robotics are important components, considering special requirements for high value markets, such as organic agriculture/livestock production. Integrated technologies and ICT tools are needed to make cost efficient compliance with standards (public and private) an integral part of farm operations, including the whole chain of suppliers and services by sharing good practices. The multifunctional European farming model delivering public goods (environment, landscape, social functions) in an efficient way needs research support to integrate, assess and quantify these services and linkage (e.g. rural tourism) to the rural economy. Overall trends of the European societies have to be considered and new models of relationships with consumers and citizens.

Funding scheme: Small collaborative project

Expected impact: The project will increase competitiveness of farming in less protected markets, will increase viability of rural areas and improve competitiveness of the European farm machinery industry. It will substantiate perspectives of farming in providing public goods and services.

Activity 2.2: Fork to farm: Food (including seafood), health and well being

Area 2.2.3 Food processing

KBBE-2007-2-3-01: Smart control for improved food and feed technologies
Call: FP7-KBBE-2007-1
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 needs of consumers and of small and large industries in terms of applicability. 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: Increased excellence in the field of IT applications to food processes. More sustainable processes in terms of energy and waste, performance improvement and reduced production costs of high-quality foods supporting the competitiveness of European food, sensor and IT industries, in particular SMEs. Increased number of patents in the area and new market opportunities.

KBBE-2007-2-3-04: Nano-devices for quality assurance, food safety and product properties
Call: FP7-KBBE-2007-1
The aim is to develop nano-devices to be used online, at-line and in situ for monitoring food quality, safety and product properties along the entire food chain. Developed instrumentation should be able to interact with information technology tools in order to enhance quality control systems and determine parameters to correlate the quality and safety of the product. Activities also include the identification, development and/or implementation of smart nanobased tools for packaging and delivery systems for food quality preservation, safety, monitoring and control. Nano-devices should be considered to incorporate sensing, preservation, biocide, reporting and remote control properties. Hazard testing and risk analysis have to be performed as nano-technologies develop. Collaboration of food technologists, sensor specialists and industrial quality managers is needed; SMEs should be involved.
Funding scheme: Small collaborative project
Expected impact: Development of innovative process/product control systems based on robust and reliable sensor technologies compatible with food systems. Optimised ways to integrate the sensing, reporting and remote control of the quality, safety and properties within food products throughout the production process. Increased European scientific excellence throughout the European Research Area by an increased number of patents in the area and new market opportunities.

Area 2.2.4 Food quality and safety

KBBE-2007-2-4-02: Detecting contaminants in the food and feed chain

Call: FP7-KBBE-2007-1

The control of potential hazards to ensure food and feed safety requires the development of simplified, inexpensive control and detection methods. Research will focus on key potential hazards including crop protection agents, veterinary pharmaceuticals, persistent organic pollutants, perfluorinated compounds, heavy metals and biological toxins, including alkaloids.

Funding scheme: Large collaborative project

Expected impact: Improved toxicological exposure assessments for key potential hazards, new approaches to assessing the hazard posed by chemical risks, contribution to the development of validated predictive models for behaviour of relevant hazards in foods and feed. Addresses policy needs, in particular regulatory control and enforcement aspects, in the area of feed and food safety.

Area 2.2.5 Environmental impacts and total food chain

KBBE-2007-2-5-04: Sustainability of the food chain

Call: FP7-KBBE-2007-2A

Research using life cycle assessment in combination with other tools for 'system analysis', should establish to what extent food chains differ with respect to their sustainability. Parameters affecting the sustainability at the global level of food supply systems will be identified and will enable the development of pilot models to be used for identification of more sustainable production systems, taking into account also the issues of fair and ethical trade. Secondly, technological and management solutions to increase sustainability may be developed for the identified 'hot spots' within production, processing, packaging and transportation, from a food chain perspective. Thirdly, research will develop methods for increasing the transparency of sustainability attributes with the aim of enhancing consumer trust and facilitating food choice. Participation of third countries, especially of ICPC developing country partners, is encouraged.

Funding scheme: Large collaborative project

Expected impact: Systems analysis of the food supply systems will provide data required to improve the sustainability of food chains. Technologies to be developed to aid implementation of sustainability strategies. Help will be provided to the consumer in choosing sustainably produced foodstuffs.

KBBE-2007-2-5-05: Reducing mycotoxin contamination in the food and feed chain

Call: FP7-KBBE-2007-2A

The research should focus on reducing the mycotoxin contamination of the food and feed chain by novel methodologies, improved handling procedures and information and education strategies. The project will involve relevant International Cooperation Partner Countries. Research on the effect of food processing technologies, further processing, preservation methods on mycotoxin levels in food and feeds will also be carried out. The principle of mutual interest and shared benefits will underpin this international cooperation with Third Countries.

Funding scheme: Large collaborative project

Additional information: Specific International Cooperation Action (SICA) – Minimum Number of Participants: 3 from different MS or AC and 3 from different ICPC

Expected impact: The project should a) develop novel methodologies and improved

handling procedures, b) generate and disseminate information and education strategies for reducing the risk for human mycotoxicoses c) enhance cooperation between researchers in Europe and in other geographic regions.

Activity 2.3 Life Sciences, biotechnology and biochemistry for sustainable nonfood products and processes

Area 2.3.1 Improved biomass and plant based renewables

KBBE-2007-3-1-06: BIOPOLYMERS - Biological Polymers from plants
Call: FP7-KBBE-2007-1
This topic aims at studying the successful demonstration and scale up of useful biopolymer production in agricultural plants. These include, but are not limited to, the synthesis of polymers with plastics and elastomeric properties such as polyhydroxyalkanoates and rubbers, starch-based plastics, as well as fibres and adhesives based on proteins or poly-amino acids. The scientific challenges include cost-effective production of high-performance biopolymers from agricultural plants through a multidisciplinary approach; finding ways to express microbial polymers such as polyhydroxyalkanoates, and proteins such as silk and adhesin in plants in sufficient concentrations without compromising the agronomic qualities of the plant; defining modifications of starch that can be implemented in plants leading to better starchbased biopolymers; developing European alternatives for natural rubber production; investigating protein co-products such as zein from corn and soybean meal as potential bioplastic raw material including their modification in plants. Economic assessments, environmental impact and life cycle analyses will be examined to identify the respective.
strength and weaknesses of the various production, use and disposal scenarios.
Funding scheme: Large collaborative project
Expected impact: Profound understanding of how plant and microbial metabolic pathways can be geared towards biopolymer production. The gradual replacement of chemical-based production by biopolymers will have a great environmental benefit.

KBBE-2007-3-1-02: ENERGY PLANTS - Novel plants for energy production
Call: FP7-KBBE-2007-1
Crops which are grown specifically for the production of renewable energy offer new opportunities for sustainable forestry and agricultural systems. Where this involves marginal land, new economic potential can be realised. Our current knowledge of dedicated energy crops is limited, both in relation to the biological processes involved in the synthesis of substances acting as raw material for biofuel production, as well as, in relation to the discovery, domestication and/or development of new energy crops. Realising the potential of this area will necessitate the application of genetic and genomic technologies to facilitate gene discovery and fast-track breeding. developing greater knowledge of supply chain issues including life cycle analysis and environmental impact.
Funding scheme: Small collaborative project
Expected impact: Market driven, hardy, viable and profitable energy crops with enhanced traits derived from conventional and biotechnological breeding techniques which exploit the post genomic knowledge base.

KBBE-2007-3-1-07: FUTURE CROPS - Technical, socio-economic, environmental and regulatory aspects of future non-food crop systems

Call: FP7-KBBE-2007-1

The project will analyse parameters that can contribute to establishing non-food crop system alongside food crop systems. This could include land allocation of non-food areas, ways to ensure parallel cultivation with food crops and the safety of the food chain. Parameters can be technical (choice of crop, rotation, yield, raw material characters, distance field/plant etc.), socio-economic (public acceptance, rural development, impacts on market prices etc.), environmental (sustainability criteria, impacts on soil and water resources) and regulatory (coexistence; safety measures when using crops for both food and non-food uses). The research should help the EU to be competitive in developing its bioeconomy and should involve all players along the chain, taking into account ongoing activities world-wide.

Funding scheme: Coordination and support action aimed at coordinating research activities

Expected impact: Research should provide answers as to whether a competitive bioeconomy is a viable option for Europe.

KBBE-2007-3-1-08: BIOMASS SUPPLY AND IMPACT – Identification of optimal terrestrial and aquatic biomass and waste for Bioproducts

Call: FP7-KBBE-2007-1

In the context of the anticipated expansion of the farming area designated to biomass and biofuel production, there is a need to quantify the potential, and identify the best sources, of European biological feedstocks for industry, while at the same time evaluating the sustainability of biomass and biofuel production with respect to their availability, production, supply cost and environmental impacts. Furthermore, an overview on the present status of research is needed, as are tools for assessing the suitability of different types of land for different types of biomass/biofuels production. Identification of the optimum Life Cycle Assessment and economic and environmental impact schemes must be included in the study.

Funding scheme: Coordination and support action aimed at coordinating research activities

Expected impact: EU sanctioned guidelines for farmers and policy makers as to the best biomass sources to cultivate according to region, climate, policy, life cycle assessment, processing, access, etc. Optimised use of industrial and agricultural waste as resources for added value products contribute to more sustainable industrial production and better resource uses.

Area 2.3.2 Bioprocesses

KBBE-2007-3-2-09: BIOREFINERY - Biotechnology for the conversion of biomass and waste into value-added products

FP7-KBBE-2007-2A

Through the use of bio-refineries, Europe can achieve the integration of agricultural production, forestry, chemical and biological industries. The conversion of biomass, agricultural by-products and waste into a diverse range of value-added products such as food, fibres, chemicals, and energy from a single feedstock will be demonstrated. The main area of research is to find the best ways to apply the integrated chain and whole crop approach, and to apply all necessary technologies to improve the product base with a special emphasis on industrial biotechnology.

Funding scheme: Large collaborative project

Expected impact: Demonstration of working biorefinery with a processing/marketing link between agriculture and industry developing new and modified products in close cooperation with agriculture, the processing industry and end users.

Area 2.3.3 Environmental biotechnologies; Use of waste and by-products

KBBE-2007-3-3-03: ANIMAL BY-PRODUCTS - Novel methods of treatment of animal by-products for the production of substances with biologically valuable functional properties
Call: FP7-KBBE-2007-1
By-products of the animal processing industry represent an increasing volume of biomass, whose potential is under-utilised. Development of efficient biotechnological methods for the treatment of non-valuable meat and poultry processing intermediates, for the production of proteins and other biologically valuable substances with specific functional properties to be used as raw material for other industrial uses. The aims of this project are: Optimisation of new enzymes (e.g. collagenase, keratinase, peptidase) and multienzyme blends for rational design of functional properties of the target products; Application of the newly obtained products with programmed functional properties (e.g. high food and feed value, as bioactive peptides, high water retention, optimal amino acid composition, low allergenicity, optimised immunological response and protection against infectious diseases, etc.) for alimentary animal-feeding, pharmaceutical or cosmetic industry and other uses. Establishing modern and efficient technological methods for biofuel (biodiesel, biogas) production from animal byproducts. Development of a technology platform for multi-purpose processing of industrial by-products, to be adapted in different industrial sectors. This topic excludes fish-based waste.
Funding scheme: Small collaborative project
Additional information: SICA - Specific International Cooperation Action - Minimum Number of Participants:2 from different MS or AC and 2 from different federal units (provinces, oblasts, republics or states) from Russia
Expected impact: Processing of industrial animal by-products for generating added value compounds and for energy production. Increased industrial capacity and profitability in EU countries and emerging economies such as Russia. Lowering pressure of industrial waste on the environment. The project is expected to contribute to the "EU-Russia Common Space for Education and Research" and to the S&T bilateral agreement between the EU and the Russian Federation, on the basis of mutual interest and shared benefits.

III IMPLEMENTATION OF CALLS

• Call identifier: *FP7-KBBE-2007-1*
• Date of publication: 22 December 2006
• Deadline: 2 May 2007 at 17.00 hrs (Brussels local time)
• Indicative budget:192.09 M€ from 2007 budget

Activity	Funding Schemes	Indicative amount (million €)
Call Identifier: FP7-KBBE-2007-1		
Activity 2.1: Sustainable production and management of biological resources from land, forest and aquatic environments	Large collaborative projects and Networks of Excellence	**15.00**
	Small collaborative projects and CSAs	**67.00**
Activity 2.2: Fork to farm: Food (including seafood), health and well being	Large collaborative projects and Networks of Excellence	**32.50**
	Small collaborative projects and CSAs	**29.09**
Activity 2.3: Life sciences biotechnology and biochemistry for sustainable non-food products and processes	Large collaborative projects and Networks of Excellence	**35.00**
	Small collaborative projects and CSAs	**10.50**
Activity 2.4: Other activities	Large collaborative projects and Networks of Excellence	**0**
	Small collaborative projects and CSAs	**3.00**

The selected topics may be open only for the call indicated, and it is envisaged that up to one project will be retained for each topic, unless otherwise indicated. There may be competition between proposals submitted on different topics and proposals submitted on the same topic. This may result in some topics not being supported.

• Call identifier: *FP7-KBBE-2007-2A*
• Date of publication: 8 May 2007
• Deadline: 1st stage deadline 11 September 2007 at 17.00 hrs (Brussels local time).
For those proposals passing the first stage evaluation, there will be a deadline for full proposals of 31 January 2008 at 17.00 hrs (Brussels local time).
• Indicative budget: 0 M€ from 2007 Budget

IV INDICATIVE PRIORITIES FOR FUTURE CALLS

Indicative topics of the 2008 work programme:

Area 2.1.1

• New and converging technologies for Precision Livestock Farming in European animal production systems

Area 2.1.2

• Improved agro-forestry systems for sustainable farming (SICA)
• Development of new detection, diagnostic and management methods in support of Plant Health policy

Area 2.2.3

• Sustainable processing, water and energy savings

Area 2.3.1

• SWEET SORGHUM - Alternative energy crops for biofuel production in semi-arid and temperate regions – SICA (Latin America)
• NONFOOD SUPPLY - Harvesting storage and transport of raw material

2. THEME 3
ICT - INFORMATION AND COMMUNICATION TECHNOLOGIES

2.4 Funding schemes

The activities supported by FP7 will be funded through a range of "Funding schemes". These schemes will be used, either alone or in combination, to fund actions implemented throughout the Framework Programme. The funding schemes used for the research objectives identified in this Work Programme are the following:

1. Collaborative projects (CP)

Support to research projects carried out by consortia with participants from different countries, aiming at developing new knowledge, new technology, products, demonstration activities or common resources for research. The Funding Scheme allows for two types of projects to be financed:

a) "*small or medium-scale focused research actions"(*STREP)*,*
b) *"large-scale integrating projects*" (IP).

2. Networks of Excellence (NoE)

Support to Joint Programme of Activities implemented by a number of research organisations integrating their activities in a given field, carried out by research teams in the framework of longer term cooperation.

3. Coordination and support actions (CSA)

Support to activities aimed at coordinating or supporting research activities and policies (networking, exchanges, coordination of funded projects, trans-national access to research infrastructures, studies, conferences, etc). These actions may also be implemented by means other than calls for proposals. The Funding Scheme allows for two types of projects to be financed:

a) "*Coordination Actions"(*CA)*,*
b) *"Specific Support Actions*" (SA).

This work programme specifies for each of the research objectives, the type(s) of funding scheme(s) to be used for the topic on which proposals are invited.

3 Content of calls in 2007

3.1 Challenge 1: Pervasive and Trusted Network and Service Infrastructures

Objective ICT-2007.1.2: Service and Software Architectures, Infrastructures andEngineering

Target outcome

a) **Service architectures, platforms, technologies, methods and tools** that enable context awareness and discovery, advertising, personalisation and dynamic composition of services. They should support flexible business models, provide for service management, and guarantee end-to-end quality of service. They will cater for multiple component technologies and support vendor independence. Opportunities for standardisation should be exploited.

b) **Service/software engineering approaches** development processes, product lifecycle and tools for dynamically composed systems with dependable quality of service and reliability properties and promoting new open development paradigms with a higher degree of involvement of joint user and development communities.

c) **Strategies and technologies enabling mastery of complexity, dependability, and behavioural stability** in complex systems and in systems evolving over time without central design. Appropriate mechanisms should guarantee end-to-end quality of service.

d) **Virtualisation tools, system software, middleware and network-centric operating systems,** including Grid-based systems, that orchestrate unlimited, heterogeneous and dynamic resources distributed across multiple platforms as a single entity, and provide platform-independent access and sharing of knowledge, processing, communication, storage and content. They also enable the definition and execution of tasks and workflows for collaboration and operation across multiple domains and optimise usage of distributed resources.

e) **Coordination and support actions** for: i) roadmapping, strategy and policy formulation, clustering of activities, support for standardisation and conference support; ii) coordination with national or regional programmes or initiatives.

Expected Impact:

Improving the competitiveness of enterprises and the efficiency of organisations in Europe by:

• Allowing the creation of dynamic services with guaranteed properties and new networked applications capable of interoperation across a wide variety of business domains and organisations of all sizes. Supporting all organisations developing or using software and services, particularly SMEs, to improve their competitiveness and adjust to the emerging global service economy.

• Increased efficiency and productivity in software development and higher level of software reliability through novel service and software engineering tools and improved mastering of complex systems.

• New opportunities, notably for SMEs, through open and standard platforms and interfaces for: software and service development; middleware for resource sharing; and next generation operating systems.

Funding schemes

CP, NoE, CSA

Indicative budget distribution

10213 M€:

- CP 91 M€ of which a minimum of 38 M€ to IP and a minimum of 30 M€ to STREP;

- NoE 9 M€;
- CSA 2 M€
Call: FP7-ICT-2007-1

Objective ICT-2007-1.3: ICT in support of the networked enterprise

Target outcome

a) Generic integrated solutions for inter-enterprise interoperability and collaboration in the context of the networked enterprise.

b) Architectures and platforms for the integrated enterprise supporting massively distributed networked devices, notably enhanced RFID-based systems.

c) Tools and technologies that enable intra-enterprise collaboration and the definition and execution of tasks and workflows for operation across multiple domains.

Research results should support highly distributed operations, reduced life cycle cost, and integration with legacy systems. The work should in particular support business networks addressing the specific needs of SMEs.

Expected Impact:

• Improving the competitiveness of enterprises in Europe by fostering the creation of new networked applications and services capable of interoperation across a wide variety of business domains and organisations of all sizes.

• Reinforcing Europe's technology and industry strengths in application and businessspecific software, service and applications development.

Funding schemes

CP, CSA (one CA for coordination of EU activities on RFID and one SA for global RFID related standardisation activities involving in particular organisations from China, Japan,
Korea and USA)

Indicative budget distribution

26 M€:

- CP 25 M€ of which a minimum of 9 M€ to IP and a minimum of 9 M€ to STREP - 1 M€ for2 CSAs

Call: FP7-ICT-2007-1

3.2 Challenge 2: Cognitive Systems, Interaction, Robotics

Objective ICT-2007.2.1 (ICT-2007.2.2): Cognitive Systems, Interaction, Robotics

Target outcome:

a) **Artificial systems** that fulfil one or both of the following requirements:

• they can achieve general goals in a largely unsupervised way, and persevere under adverse or uncertain conditions; adapt, within reasonable constraints, to changing service and performance requirements, without the need for external re-programming, re-configuring, or re-adjusting.

• they communicate and co-operate with people or each other, based on a wellgrounded understanding of the objects, events and processes in their environment, and their own situation, competences and knowledge.

Work will result in demonstrators that operate largely autonomously in demanding and open-ended environments which call for a suitable mix of capabilities for sensing, data analysis, processing, control and acting; and for communication and co-operation with people or machines or both. Where required, systems will integrate high-level cognitive competencies; for example, for reasoning, planning and decision-making, and for activeenvironmental modelling.

Proposals satisfying the above requirements should focus on one of the following areas:
Robots handling, individually or jointly, tangible objects of different shapes and sizes, and operating either fully autonomously (as for instance in difficult terrains with a need for robust locomotion, navigation and obstacle avoidance) or in co-operation with people in complex, dynamic spatial environments (e.g. domestic environments).
Robots, sensor networks and other artificial systems, monitoring and controlling material and informational processes e.g. in industrial manufacturing or public services domains. This may include information gathering and interpretation in real-time emergency or hazardous situations (e.g. through multi-sensory data-fusion) or in virtual spaces related to real world objects and people.
Intuitive multimodal interfaces and interpersonal communication systems providing personalised interactivity in real-world and virtual environments, based on improved human interaction modelling and understanding of contextually-referred communication, for example, by signs and signals in all modes (such as sound, vision, touch) and modalities (such as natural language, both spoken and written), through autonomous adaptation and by addressing user needs, intentions and emotions. Work proposed in any of these areas should, as appropriate:
• develop and apply engineering approaches that cater for real-time requirements (if present) and systems modularity, and ensure the reliability, flexibility, robustness, scalability and, where relevant, also the safety of the resulting systems; and develop criteria for benchmarking these properties;
• contribute to the theory and application of learning in artificial systems, tackling issues related to the purposive and largely autonomous interpretation of sensor generated data arising in different environments, and to novel design and implementation principles of pertinent systems architectures.
• explore and validate the use of:
> advanced sensor, actuator, memory and control elements, components and platforms, based on new, possibly bio-mimetic, materials and hardware designs – e.g. for the realisation of systems with greater structural and functional diversity and modularity,
> new, possibly bio-inspired, information-processing paradigms, and of models of natural cognition (including human mental and linguistic development), adaptation, self-organisation, and emergence; and take account of the role of systems embodiment and affordances.
> new ways of combining statistical, knowledge driven and cognitive approaches to language understanding, generation, and translation by machines.
b) **A principled approach to structuring research** in relevant areas, addressing in particular learning in artificial systems, the requirements for cognitive capacities of robotic, interactive and language support systems, and including the development of experimental scenarios, the development or construction of resources for experimentation, and the development of performance metrics and definitions of autonomy levels for artificial systems.
c) **Co-ordination** with related national or regional research programmes or initiatives.
Expected impact:
• Leading-edge technology companies creating new products and services, and enhancing existing ones.
• New markets such as: extending the industrial robotics market to flexible small scale manufacturing, opening up services (professional and domestic) markets to robots, novel functionalities for embedded systems and assistive systems for interpersonal communications, such as support of dynamic translation, and effective medical diagnostics and therapeutics.
• Robust and versatile behaviour of artificial systems in open-ended environments providing intelligent response in unforeseen situations, and enhancing human-machine interaction

• Extended capabilities of people to perform routine, dangerous or tiring tasks in previously inaccessible, uncharted or remote spaces; saving critical time in emergencies or hazardous situations.
• Leading-edge research in Europe through collaborative and multidisciplinary experimentation with approaches to achieving machine intelligence and artificial cognitive systems, and through investigation of what artificial and natural cognitive systems can and cannot do.

Funding schemes
a): CP; b): NoE; c) CSA (CA only)
Indicative budget distribution
ICT Call 1:
82 M€:
- CP 74 M€ of which a minimum of 39 M€ to IP and a minimum of 13 M€ to STREP;
- NoE 7 M€;
- CSA 1M€ (CA only)
ICT Call 3:
Calls:
ICT Call 1 : FP7-ICT-2007-1 [82 M€]; ICT Call 3

3.3 Challenge 3: Components, systems, engineering

Objective ICT-2007.3.6: Micro/nanosystems

Target outcomes:
a) **Next-generation smart systems*19*:** 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.
b) Micro/nano/biotechnologies' convergence: Converging micro/nano, bio and information technologies for the development and production of integrated systems for specific applications, such as environmental monitoring, agriculture and food quality management, safety, security, biomedical and lifestyle applications. Innovative bioMEMS, biosensors, lab-on-chip microsystems and autonomous implants and bio-robots. Research will also address packaging, multilevel interfacing, manufacturing, as well as ethical and societal issues.
c) **Integration of smart materials:** Integration of micro-nano technologies and smart systems into new and traditional materials, e.g. textiles, glass, paper, etc. Major outcome is a new generation of advanced polymeric, biocompatible, bioconnective, flexible and very durable materials. Emphasis is on integration into, for example, smart fabrics (SFIT*20*) using micro/nanosystems at the fibre core, microelectronics components, user interfaces, power sources, software, all-in-one fabric, for personal (wearable) or other applications. Issues such as user-friendliness, quality, cost and comfort should be considered.
d) **From smart systems to viable products:** Advanced microsystems manufacturing technologies for the whole value chain (design, materials, processes, micro-/nano-scale devices,

packaging testing and reliability) with a focus on cost-effective sensor/actuator and system integration technologies, supported by alternative fabrication and testing processes for short time-to-markets. Pre-industrial validation of new manufacturing concepts suitable for large-scale production will also be addressed.
e) **Smart systems for communications and data management:** Smart micro/nanosystems enabling wireless access and facilitating intelligent networking with emphasis on the hardware required for communications and the management of smart device information. This includes solutions for adaptable RF and HF technologies (e.g. RFID, RF-NEMS and HF-NEMS). Data management, storage and processing functions of smart systems will also be addressed.
f) **Support actions** will ensure broad access to micro/nanosystems manufacturing technologies, in particular by SMEs, identify training and education needs of the area proposing appropriate measures and establish specific measures aiming at coordination and dissemination of smart systems integration RTD at European level.

Expected impact

• Substantial improvement on various aspects of smart systems integration: Higher product quality and reliability, increased miniaturisation, integration and functionality, lower costs, reduced power consumption, higher speed requirements and/or shorter time-to-market.
• Transformation of industrial production by adding intelligence to process control and the manufacturing shop floor, and by improving logistics and distribution - thereby increasing productivity.
• Increased market share for European companies across different industrial sectors by delivering systems with new functional capabilities and improved quality within a competitive timeframe.

Funding schemes

a-e): CP, NoE; f): CSA

Indicative budget distribution13

Call:
FP7-ICT-2007-2

Objective ICT-2007.3.7: Networked Embedded and Control Systems

Target outcomes:
a) **Middleware:** seamless connectivity and inter-working of embedded systems through new platforms that support composability, scalability and minimal power consumption while offering open interfaces to third parties for application development. Emphasis is on (1) programmability; (2) dynamic reconfiguration and ontologies; (3) enabling privacy, security and trust; and (4) predictable connectivity and QoS awareness. Priority application domains are: private/home/building, nomadic and manufacturing. Support may also be provided to industry-driven initiatives for sharing software source code and for standardisation activities in the broader embedded systems domain.
b) **Cooperating objects and Wireless Sensor Networks:** spontaneous cooperation of objects in spatial proximity in order to jointly execute a given task. This will require (1) new methods and algorithms to support different cooperation concepts and modes; (2) hardware/software platforms including operating systems or kernels and communication protocols to enable distributed optimal execution; and (3) programming abstractions and support tools to facilitate third party programming of self-organising systems composed of heterogeneous objects.

Research challenges also include dynamic resource discovery and management, semantics that allow object/service definition and querying for data and resources, advanced control that makes the systems reactive to the physical world, as well as security and privacy-enabling features. While the developed technology should be generic, it should be driven by an entire class of ambitious future applications in which scalability and deployment should be addressed. International cooperation on foundational research with the USA and other countries is encouraged.

c) **Control of large-scale complex distributed systems:** New engineering approaches that ensure efficient, robust, predictable, safe and secure behaviour for manufacturing and process plants and for large scale infrastructures such as distributed energy production, energy distribution, airports or seaports etc. Key challenges include (1) developing generic modelling and design methods, dynamically reconfiguring architectures, languages and scalable algorithms for the control of evolvable, distributed and adaptable systems; (2) mastering complexity, temporal and spatial uncertainties such as delays and bandwidth in communications and node availability; and (3) integrating advances in sensor networks for closing the control loop. Research should strengthen and consolidate European excellence in systems sciences and engineering by encouraging the control, computer and communications sciences and engineering communities to work together.

International cooperation with the USA, Russia and W. Balkans is encouraged.

Expected impact:

• Control of 10 times more complex systems at 10% of today's effort. Achieve 100% plant availability, reduce maintenance time and cost by 50% and industrial accidents by 30%.

• New services and applications that are tailored to specific needs, seizing new market opportunities.

• More efficient, flexible, secure, easier to maintain and more productive large infrastructures (e.g. power grid, water supply), manufacturing and process plants.

• Enable low-cost monitoring of the environment and natural resources.

Funding schemes

a) CP (STREP only), CSA for source code sharing and for standardisation initiatives

b) CP (STREP only), NoE

c) CP (STREP only), CSA for international cooperation

Indicative budget distribution13

Call: FP7-ICT-2007-2

3.4 Challenge 4: Digital Libraries and Content

3.5 Challenge 5: Towards sustainable and personalised healthcare

3.6 Challenge 6: ICT for Mobility, Environmental Sustainability and Energy Efficiency

Objective ICT-2007.6.1: ICT for Intelligent Vehicles and Mobility Services

Target outcome

a) ICT research in **Intelligent Vehicle Systems** will offer a higher degree of accident prevention through improved driver-warning strategies, hazard detection, actuation and sensing including sensor fusion and sensor networks, as well as the integration of independent safety systems and their interaction with the driver. Key targets are increased performance, reliable and secure operation as well as making vehicles "cleaner". New generation advanced driver assistance

systems (ADAS) will increase vehicles' intelligence and contribute to safer and more efficient driving.
b) Research in **Mobility Services for People** aims at ICT for user-centred 'always-on' mobility services based on location-aware enhanced personalised services such as context-aware personal communications and always-available information access.
c) ICT research in **Mobility Services for Goods** targets safer, more secure, efficient and environment-friendly ICT-based freight transport solutions in both urban and long-haul operations, supporting the most suitable selection of modes for consignments and safeguarding them along the transport chain as requested by Commission's Communication on freight logistics32. Closer cooperation between actors in the field is a key issue.
Research under b) and c) will integrate a number of advanced technologies, e.g. low-cost GNSS receivers, software defined radio technologies, high-accuracy hybrid positioning systems combined with dynamic navigation services, semantic web and multi-agent technologies, as well as technologies such as RFID and smart tags in combination with advanced sensors, communication and mobility management systems. Projects will also address issues such as the development of business models for public private partnerships.
For a-c) specific needs of trucks, buses, two-wheelers and fleets, e.g. in public transport and logistics operations, will be addressed covering also the associated needs of other transport modes.
d) **Coordination and Support Actions** aim at the preparation of standards, agreed specifications and the ramping up of Field Operational Tests.

Expected impact

• World leadership of Europe's industry in the area of Intelligent Vehicle Systems and expansion to new emerging markets.
• Improved safety, efficiency and competitiveness of transport systems across Europe, with strong contribution to growth and jobs and towards the objective of reducing road fatalities by 50% in EU-25 by 2010.
• New targets for efficiency and environmental friendliness in Europe's transport sector through new mobility services.
• Higher mobility of people and goods across different transport modes through the provision of accessible and reliable information services.

Funding schemes

a): CP; b-c): CP, CSA; d): CSA
Indicative budget distribution
4913 M€:
- CP 46 M€ of which a minimum of 14 M€ for IP and a minimum of 19 M€ for STREP;
- CSA 3 M€
Call FP7-ICT-2007-1

Objective ICT-2007.6.2: ICT for Cooperative Systems

Target outcome
a) ICT research in **Co-operative Systems** will deliver advanced, reliable, fast and secure vehicle-to-vehicle and vehicle-to-infrastructure communication for new functionalities, real-time traffic management and new levels of support to active safety systems in vehicles and to the driver. By combining technologies such as accurate positioning and improved sensor networking, research is expected to lead towards "zero-accident"

scenarios. An increasing number of vehicles with ICT-links to the transport infrastructure will make it possible to optimise traffic management at large scale.
b) **Field Operational Tests** are large-scale test programmes aiming at a comprehensive assessment of the efficiency, quality, robustness and user-friendliness of ICT solutions for smarter, safer and cleaner vehicles and real-time network management.
c) **Coordination and Support Actions** in the framework of the Intelligent Car initiative aim at international co-operation, standardisation and training activities as well as to assess socio-economic impact.

Expected impact

• Common pan-European architecture, standards and deployment model for cooperative systems.
• World leadership of Europe's transport industry in the emerging area of Co-operative Systems and in road and network operator's tools.
• Significant improvements in safety, security, energy efficiency, emissions reduction, comfort and sustainability of transport. This includes contribution towards the objective of reducing fatalities with 50% in EU-25 by 2010, and on longer term work towards the "zero-fatalities" scenario and a contribution to a significant reduction in the energy consumption and congestion in road transport.
• Proof-of-concept to all stakeholders through Field Operational Tests ensuring the wider take up of intelligent vehicle systems and co-operative systems.

Funding schemes

a): CP, NoE, CSA; b): CP; c): CSA
Indicative budget distribution[13]
Call
FP7-ICT-2007-2

	Budget (M€) Call 1
Challenge 1:	
1. The network of the future	171
2. Service and software architectures, infrastructures and engineering	102
3. ICT in support of the networked enterprise	26
4. Secure, dependable and trusted infrastructures	77
5. Networked media	73
6. New Paradigms and experimental facilities	
7. Critical infrastructure protection	
Challenge 2:	
1. Cognitive systems, interaction, robotics	82
Challenge 3:	
1. Next generation nanoelectronics components and electronics integration	73
2. Organic and large-area electronics and display systems	54
3. Embedded systems design	34
4. Computing systems	21
5. Photonic components and subsystems	
6. Micro/nanosystems	
7. Networked embedded and control systems	
Challenge 4:	
1. Digital libraries and technology-enhanced learning	44
2. Intelligent content and semantics	44
Challenge 5:	
1. Personal health systems for monitoring and point-of-care diagnostics	60
2. Advanced ICT for risk assessment and patient safety	26
3. Virtual physiological human	
Challenge 6:	
1. ICT for the intelligent vehicles and mobility services	49
2. ICT for cooperative systems	

3. ICT for the environmental management and energy efficiency	
Challenge 7:	
1. ICT and ageing	26
2. Accessible and inclusive ICT	
FET	
Open scheme	
1. Nano-scale ICT devices and systems	17
2. Pervasive adaptation	17
3. Bio-ICT convergence	17
4. Science of complex systems for socially intelligent ICT	
5. Embodied intelligence	
6. ICT forever yours	
Horizontal support actions	
International cooperation	6
Trans-national co-operation among NCPs	
Total	**1019**

Call title: ICT Call 1

- Call identifier: FP7-ICT-2007-1
- Date of publication: 22 December 2006[40]
- Closure date: May 8, 2007, at 17:00, Brussels local time[41]
- Indicative budget: 1019 M€

3. THEME 4
NANOSCIENCES, NANOTECHNOLOGIES, MATERIALS AND NEW PRODUCTION TECHNOLOGIES - NMP

For the NMP Theme, the **evaluation** of proposals for Collaborative projects (including those dedicated to SMEs) and Networks of Excellence will be organised in **two stages**. The rationale for this is due to the specific nature of Theme 4 – NMP, which is multidisciplinary, cross sectoral and SME intensive, for which a "bottom up"
The first stage proposal should focus on the S & T content and on clear identification of the intended results, their intended use, and the expected (economic, social, environmental, etc.) impact. It will be evaluated on the basis of two criteria: scientific quality and expected impact. Coordinators of retained proposals in stage 1 will be invited to submit a complete proposal that will then be evaluated against the entire set of evaluation criteria.

II Content of calls for proposals in 2007

4.3.2 Adaptive production systems

NMP-2007-3.2-1 Rapidly configurable machines and production systems
Technical content / scope: The main objective is to create radically new, self-adaptive machine structures with online self-optimisation based on mechatronic concepts. The knowledge-based intelligent modules can feature multi-layer control, sensing and actuator structures with a high level of redundancy which guarantees a high level of reliability and allows optimal performance of a production system under different conditions.
Innovation lies in moving from current 'assembled' sensor, actuator and control system architectures towards mechatronic knowledge-based systems.
The research should initially focus on the development of "adaptronic" modules and interfaces and their integration in intelligent manufacturing equipment through the development of active intelligent components (integrating, as appropriate, sensors, actuators, control, mechanical structures); development of tools for integrated/embedded optimised system configuration based on mechatronic modelling and simulation with respect of the resulting performance (including damping characteristics, working envelope, etc.). Deliverables include (i) tools and methods for an adaptive, mechatronic manufacturing system and components modelling, set-up and use; (ii) prototype adaptronic modules and applications of their usage in machines and production systems.
Funding scheme: Small or medium-scale focused research projects
Call identifier: *FP7-NMP-2007-SMALL-1*

Specific features: Proposals are expected to be industrially led and to include component manufacturers and OEMs (Original Equipment Manufacturers) for ensuring market take-up of the new technologies. Proposals are also expected to take into account relevant standardisation and interoperability issues.
Expected impact: New generation of products helping European instrument manufacturers and machine builders to stay ahead of the competition. Reduction of time needed for reconfiguration and maintenance, yielding a significant increase in productivity for small batch production. Better process control allowing a considerable reduction in resources consumption (both energy and raw materials).

NMP-2007-4.0-3 Multifunctional materials for future vehicles

Technical content/scope: The design, processing and a more intelligent use of new multifunctional materials, together with improvements in production technologies, are essential in order to combine mobility, sustainability, reliability and safety in future light vehicle design and manufacturing. High added value components with improved performance and tailored properties would strengthen in particular the competitiveness of the automotive industry. These new multifunctional materials, developed in particular with the help of modelling methods, would combine classical with new properties, such as self healing of damage caused by abrasion and wear, variable strength or sensor properties, may contain micro-encapsulated inclusions and would be able to self-adapt their range of properties depending on the requirements during application. A sensing functionality of self-healing materials should enable them to sense their internal state and their external environment, so that they can detect their healthiness or their reduced functionality at specific locations and
trigger the self-healing mechanisms. Multifunctional materials should also allow the triggering of safety mechanisms, e.g. based upon the state of the driver. New high performance materials and components should be investigated that contain an inherent ability to be active and reactive through the integration of sensors or actuators (e.g. active materials inside matrix materials, touch sensitive plastics, biodegradable parts with slow surface and fast core).

Funding scheme: Large-scale integrating collaborative projects.

Call identifier: *FP7-NMP-2007-LARGE-1*

Specific features: Industry participation is essential and SME participation is encouraged.

Expected impact: Maintaining the competitiveness of the automotive and other transport industries. Multifunctional, high performance materials should be developed that can adapt their range of properties depending upon their requirements during application, for example in self-healing (abrasion or wear). These high performance materials should be developed at acceptable costs to allow incorporation into vehicle development and maintain worldwide competitiveness of European transport industries.

NMP-2007-2.4-3 Renewable materials for functional packaging applications

Technical content / scope: Innovative renewable materials (e. g. wood or vegetable based) and their ecoefficient processing are required to provide novel entirely-renewable functional packaging solutions for a global market. Important drivers for innovation using life-cycle approaches in these renewable packaging materials are cost reduction, improved functionality, higher flexibility and prolonged shelf life of packaged consumer goods like seafood by improved barrier (e.g. active, antimicrobial, permselective, intelligent adaptive) performance. Smart features such as displays or sensors can be incorporated into packaging materials using ink and printing technologies that allow for low production costs. The focus should be on the design and processing of innovative, renewable packaging materials as well as on the interactions between different types of renewable materials, e.g. in multilayer packaging, using the latest developments in nanotechnology. Special emphasis should be put on material performance (e.g. functionality, surface strength, moldability, chemical and microbiological safety, biodegradability, hydrostability, moisture resistance and microbiological immunity). Materials processing should display low emissions, reduce the use of chemicals, but enhance the use of "green" biotechnological alternatives in the manufacture and treatment of packaging materials and printing inks. Funding scheme: Small or medium-scale focused research projects.

Special features: Industrial participation is required.

Expected impact(s): From product storage and distribution to waste disposal and environmental degradation of packaging materials. Packaging is a high volume business close to the consumer where demands for a sustainable transformation will continue to increase. A contribution towards the overall target of reducing greenhouse gases and the dependency on petroleum resources is expected.

NMP-2007-4.0-1 Advanced wood-based composites and their production

Technical content / scope: The market price on standard technology wood-based products is increasingly driven by low labour cost countries that have short timber harvesting cycles. The difference in production costs is so significant that improving production efficiency is not sufficient alone to maintain the competitiveness of the European forest-based industry. A strategy for success is to develop new high added value products produced by new resource efficient production concepts. Wood as a natural and abundant composite can form the basis for a completely new industry based on intelligent recombination of specific physical properties such as heat insulation, conductivity and mechanical strength and shape in engineered wood products (EWP). For example, replacing lignin with silicon, geofiller or
ceramics in the wood nano-structure, chemical grafting of cellulose or environmentally friendly chemical densification can yield radically new product properties. New wood and bio-fiber polymer composites (e.g. transformation of wood fibres and thermoplastic resins into wood polymer composites throughout plastic processing, injection moulding, extrusion or pultrusion) show high potential for construction, furniture and packaging applications. The ambitious research objectives include adaptive production concepts for new composites based on wood fibres, cellulose, lignin, or hemicelluloses, and their derivatives; manufacturing technologies such as moulding, shaping, compounding, melt blowing and electro-spinning; new manufacturing methods for sheet structures and converting operations that enable paper to replace non-renewable materials; engineering concepts for cellulose processing, e.g. melting and solid-state processing.

Funding scheme: Large-scale integrating collaborative projects

Specific features: In line with the objectives of this topic, adequate industrial participation is recommended. Although this is not a dedicated SME topic, a significant SME participation is nevertheless expected.

Expected impact: The expected strategic impacts include: (1) placing sustainability at the forefront of cost control and competitive advantage as well as emphasising its role in industry's social responsibility, and (2) addressing Health and Safety issues for both the worker and the consumer through promotion of intrinsically better technologies. More specifically, funded proposals are collectively expected to develop several new product families based on new production concepts that exploit the potential of wood-based composites across a variety of applications in the health, electronics and food sectors, as well as in the fields of construction, furniture, packaging, speciality papers, vehicles and textiles.

NMP-2007-4.0-2 Application of new materials including bio-based fibres in high-added value textile products

Technical content / scope: Intensified research and development efforts, especially from the SME segment of the textiles industry, are required for reinforcing Europe’s leadership in the technical textiles field and for establishing the EU as the global lead market for application of innovative textile products. Enhanced fibre properties are the key for improving the properties of these new

products and applications in terms of weight performance ratios, strength, durability, flexibility, bio-degradability, energy-efficiency, insulation, temperature and moisture management, permeability, self-cleaning and self-healing. The new materials targeted by the topic are based on natural and bio-based fibres, speciality fibres and fibre-composites. The research should concentrate on bulk fibres with new or significantly improved properties, novel fibres with tailored functionalities for special applications, natural fibres and bio-based fibres; new processing and production concepts include the development of environmentally friendly and energy-efficient processing and surface modification of fibres, yarns and fabrics to enhance manufacturing of textile- and composite-based innovative products. Deliverables will include the fibre innovation itself, the development of new products and application areas and competitive new processing and production concepts. The main application areas targeted are transport systems, energy systems, agri- and aquaculture, food and packaging applications, machines and other durable equipment, sports and leisure, furniture, home textiles and other similar consumer application sectors.
Funding scheme: Collaborative projects targeted to SMEs
Specific features: SME dedicated collaborative projects are specifically designed to encourage SME participation in research and innovation representing the complete value added of the targeted sectors. Research and innovation activities need to be covered by the projects. In each project, at least 35% of the EC contribution is expected to be allocated to the participating SMEs. The projects will be led by SMEs with R&D capacities but the coordinator does not need to be an SME. The participating SMEs should have the decision making power in the project management. The output should be for the benefit of the participating SMEs and the targeted SME dominated industrial communities. Smart textiles with embedded systems such as sensors and actuators as well as developments with the main applications in building and construction, medical and protective clothing domains are excluded from this call.
Expected impact: The expected strategic impacts include: (1) promoting Innovation and the ability of European Textile SMEs to use the results of research; (2) founding market competitiveness on knowledge and added value through highly specific customisation to address specific high-tech markets ideally suited to European Textile high-tech SMEs. More specifically, replacement of currently used traditional textile and nontextile materials in the targeted application areas by at least 20% and an acceleration of currently projected
growth rates for technical textile application areas by at least 10% over the next 5 to 10 years.

V Indicative priorities for future call(s)

4.3 NEW PRODUCTION

• Robotics for Crop/Forestry Management

IV Implementation of calls 2007

• Call identifier: *FP7-NMP-2007-SMALL-1*
• Date of publication: 22 December 2006
• Deadline: For Small or medium-scale focused research projects - first stage: 04 May 2007 at 17.00 (Brussels local time)
• Indicative budget: M€ 105.723 **in 2007**1. An amount for the 2008 budget is expected to be added to these calls for which a new financing decision to cover the budget for that year will be requested at the appropriate time.

• **Call identifier**: *FP7-NMP-2007-LARGE-1*
• **Date of publication**: 22 December 2006
• **Deadline**: For Large scale integrating collaborative projects - first stage: 04 May 2007 at 17.00 (Brussels local time)
• **Indicative budget: 200 M€ in 2007[1].** An amount for the 2008 budget is expected to be added to these calls for which a new financing decision to cover the budget for that year will be requested at the appropriate time.

Indicative Budget (Million €)

		2007*
1st calls		
	Large scale integrating collaborative projects	200.000
	Small or medium scale focused research projects	105.723
	SME-targeted projects	44.000
	CSA (Coordination and support actions) **	15.000
	ERANET Plus ***	
Other activities	- *Evaluation (3.50)* - *Calls for tenders (1.550)*	5.050
General Activities (see Annex 4)	- *Cordis (0.787)* - *Eureka/ research organisations (0.090)* - *Cost (3.376)* - *ERANET (7.096)* - *RSFF (18.140)*	29.490
TOTAL		399.263

4. THEME 5
ENERGY

Structure and focus of calls in 2007

Calls for Proposals will be selective. There will be competition, based on quality and excellence, between proposals both across and within research topic areas in each call, which may result in some topics not being supported in a given call. A common call with two parts will be published for 2007. One part (FP7-ENERGY-2007-1-RTD) will focus on research with a longer term perspective, with a view to accelerating technology development, and will cover the available budget for such activities for 2007. An amount from the 2008 budget is expected to be added to this call, for which a new financing decision to cover budget for that year will be requested at the appropriate time. The other part (FP7-ENERGY-2007-2-TREN) will focus on research with a shorter term perspective and particularly demonstration actions (with a research element included), with the main objective of shortening the time to market for promising technologies and systems, and will cover the available budget for such activities for 2007. The calls will be implemented using Collaborative Projects and Coordination and Support Actions. The funding scheme applicable to each topic is indicated in this Work Programme, along with guidance as to the expected level of ambition and other relevant information.

5.2. CONTENT OF CALLS IN 2007

This section describes only the topics for which proposals will be called for in 2007. It will be updated on an annual basis in successive Annual Work Programmes.

AREA ENERGY.2.2: BIOMASS

Topic ENERGY.2007.2.2.1: Advanced gas cleaning technologies for biomass

Content/scope: Development of advanced gas conditioning and gas cleaning technologies (including tar removal or conversion, gas and particulate emissions abatement) to obtain a high purity syngas for the requirements of high-efficiency conversion technologies such as (e.g.) fuel cells.

Funding scheme: Collaborative Project (small or medium scale focused project) with a predominant R&D component. Only one is expected to be funded.

Expected impact: The resulting technologies should allow the production of a gas with the required specifications for use in fuel cells in a cost-effective way.

Other information: SMEs are important in the innovation process for this topic.

Open in call: FP7-ENERGY-2007-1-RTD

Topic ENERGY.2007.2.2.4: Large-scale co-firing

Content/scope: Demonstration of co-firing of biomass in existing large-scale fossil fuel fired power plants with high net electric efficiency and high biomass shares is addressed. Activities should include long term monitoring of the sustainability and reliability of feedstock supply and of the co-firing impact on power plant performance (e.g. on the flue gas cleaning systems, ash usability, plant availability). This topic is open to all co-firing concepts (direct and indirect) and biomass feedstocks.

Funding scheme: Collaborative project with a predominant demonstration component.

Expected impact: To substantially increase the highly efficient co-firing of a variety of biomass feedstocks into existing fossil fuel power stations through successful

demonstration of technology, sustainable fuel supply, and high long-term power plant performance.
Other information:
Open in call: FP7-ENERGY-2007-2-TREN

Topic ENERGY.2007.2.2.5: Novel solid biofuels for electricity generation
Content/scope: Demonstration of the production of new, tradable solid biofuels fully or partially based on unconventional and difficult resources such as e.g. straw and/or organic wastes including their long-term application in existing bio-electricity installations is intended. The new biofuels should be ready-to-use for the plant operators without the necessity of major technical adaptations of the existing conversion plants themselves.
Supplementary pre-normative work aiming at a future European-wide standardisation of these new biofuels is welcome.
Funding scheme: Collaborative project with a predominant demonstration component.
Expected impact: Increase the range of usable biomass feedstock for existing bioelectricity installations. Reduce the production cost of solid biofuels through the (partial) use of low-cost feedstock.
Other information:
Open in call: FP7-ENERGY-2007-2-TREN

Topic ENERGY.2007.2.2.6: High-efficiency medium-to-large scale electricity generation from biomass
Content/scope: Demonstration of medium- to large scale power generation from biomass with increased net electric efficiency, high process reliability at levels which are competitive with those of fossil fuel based power generation, and low pollutant emissions is addressed. Depending on local fuel supply conditions such installations may have to be able to run on biomass feedstock of varying origin and quality. This call is open to all conversion technologies (combustion, gasification etc.) and all biomass feedstocks.
Funding scheme: Collaborative project with a predominant demonstration component.
Expected impact: The objective is to offer to the market new and improved conversion technologies for the medium to large scale power generation from biomass.
Other information:
Open in call: FP7-ENERGY-2007-2-TREN

ACTIVITY ENERGY.3: RENEWABLE FUEL PRODUCTION

Topic ENERGY.2007.3.1.1: Bioethanol from sugar and starch crops
Content/scope: Demonstration at industrial scale of bioethanol production with improved efficiencies and with particular emphasis in the energetic utilisation of the process (plant to biofuel) by-products in view of significantly reducing the cost of bioethanol to comparable international levels and improving the carbon and energy balances.
Funding scheme: Collaborative project with a predominant demonstration component.
Expected impact: Reduced production costs for bioethanol, and improved environmental performance with higher energy and CO2 balances.
Other information: SMEs are expected to be important contributors to such technology development.
Open in call: FP7-ENERGY-2007-2-TREN

Topic ENERGY.2007.3.1.2: Biodiesel from oil crops, animal tallow and used cooking oils

Content/scope: Demonstration at industrial scale of biodiesel production with improved efficiencies and with particular emphasis in the energetic utilisation of the process (plant to biofuel) by-products in view of significantly reducing the cost of biodiesel and improve the carbon and energy balances. The production of Fatty Acid Ethyl Ester and the use of the by-product glycerine as a fuel in stationary applications will also be addressed.
Funding scheme: Collaborative project with a predominant demonstration component.
Expected impact: Reduced production costs for biodiesel, and improved environmental performance with higher energy and CO2 balances.
Other information: Related to topic ENERGY.2007.3.3.2. SMEs are expected to be important contributors to such technology development.
Open in call: FP7-ENERGY-2007-2-TREN

Topic ENERGY.2007.3.2.1: Pre-treatment of lignocellulosic biomass for ethanol production

Content/scope: Development of new and advanced pre-treatment technologies for lignocellulosic biomasses (agricultural residues, wood, forestry residues and biodegradable fraction of municipal solid waste and perennial annual crops). Research should focus on optimising the exposure of cellulose and hemicellulose for subsequent enzymatic hydrolysis, while minimising the production of inhibitors and reducing the environmental impact of the pre-treatment. The technologies developed should improve the overall process efficiency of the whole lignocellulose to ethanol process, and optimise the pre-treatment for the production of added value bio-products in this phase or the subsequent steps. Research should include testing of the technology from lab-scale to pilot reactors.
Funding scheme: Collaborative Project (small or medium scale focused project) with a predominant R&D component.
Expected impact: The results are expected to substantially reduce the cost of the pre-treatment step and improve its environmental performance.
Other information: For technology development, SMEs are expected to represent the core members of the team.
Open in call: FP7-ENERGY-2007-1-RTD

Topic ENERGY.2007.3.2.2: New and advanced technologies for hydrolysis and/or fermentation of lignocellulosic biomass

Content/scope: Optimisation of the enzymatic hydrolysis of cellulose and hemicellulose, and/or the fermentation of the produced sugars, either as separate processes or in SSF (simultaneous saccharification and fermentation). Research should focus on one or both of the following steps:
(1) Development of new and improved enzymes (e.g. thermostable enzymes) and enzyme systems, with a view to improving the rate of enzymatic hydrolysis and enzyme recycling in the whole lignocellulose to ethanol process. Research should include both production of the improved enzymes and their testing - at laboratory scale and in a pilot reactor - on pretreated biomasses ranging from agricultural residues to wood and forest residues, the biodegradable fraction of municipal solid waste and perennial annual crops.
(2) Development of improved yeasts and/or thermophilic bacteria aiming at increasing the ethanol yields of the fermentation of C5 and C6 sugars from hydrolysed lignocellulosic biomass.

Research should address the optimisation of fermentation conditions, including the effect of the degradation compounds on fermentation.
***Funding scheme*:** Collaborative Project (small or medium scale focused project) with a predominant R&D component.
Expected impact: The results are expected to substantially reduce the cost of lignocellulosic ethanol production.
Other information: For technology development, SMEs are expected to represent the core members of the team. N.B. Complementary topics, comprising non-fuel uses and with a focus on basic research on enzymes and micro-organisms, are open in the theme "Food, Agriculture and Biotechnology".
Open in call: FP7-ENERGY-2007-1-RTD

Topic ENERGY.2007.3.2.5: Synthetic biofuels via gasification
Content/scope: Demonstration at industrial scale of synthetic biofuels from lignocellulosic biomass (and its derivatives such as black liquor and flash pyrolysis bio-oil), with emphasis in the production of clean synthesis gas and the final synthetic fuel process steps. The final output of this demonstration should lead alternatively to one of the following final products: DME, methanol, ethanol, Fischer-Tropsch biofuel or biomethane. The methanol could also be used for hydrogen production; the ethanol for both CHP applications and hydrogen production. The final biofuel should also be tested in appropriate engines and/or vehicles and/or fleets in order to check technical standards, commercial possibilities and engine compatibilities.
Funding scheme: Collaborative project with a predominant demonstration component.
Expected impact: New types of biofuels production processes with significantly improved energy and environmental performance.
Other information:
Open in call: FP7-ENERGY-2007-2-TREN

Topic ENERGY.2007.3.2.7: Identifying research needs and technological opportunities for biofuels production in Latin America

Content/scope: Mapping of Latin America (LA) biofuels sector and its research capacities and assessment of the related opportunities and RTD needs. The analysis of research expertise/capacities and innovation potential should focus on biomass conversion technologies taking into consideration sustainability aspects and adaptation to local conditions. Ongoing bilateral cooperation should also be taken into account.
Funding scheme: Support Action.
Expected impact: The results are expected to increase awareness about EU-LA opportunities for collaboration in the area of biofuels and propose suitable areas for cooperation.
Other information: This is a Specific International Cooperation Action. Proposals should provide a broad coverage of LA countries having bilateral cooperation agreements with the EU. Relevant LA stakeholders, such as a research centres, universities, biofuel producers, should have a leading role.
Open in call: COOP-ENERGY-2007-1-RTD

Topic ENERGY.2007.3.3.3: Developing biorefinery concepts

Content/scope: Development of advanced biorefinery schemes to be integrated into existing industrial complexes, such as sugar/starch ethanol plants, oil-seed crushing/trans-esterification plants, pulp and paper mills, oil refineries. Feasibility studies should identify the optimal integrated schemes of production and the best suited "building blocks" in term of processes and bioproducts. The analysis should consider optimal uses of the side-streams, innovative fractionation and conversion technologies, most promising bioproducts and maximising energy production. Simulation tools will be necessary to support the analysis, which should focus on a particular biomass sector, and should identify the main technological challenges for the realisation of the developed schemes.
Funding scheme: Coordination and Support Action (support type). More than one may be funded.
Expected impact: The analysis will identify opportunities for various biomass-based sectors to produce fuels while increasing their competitiveness.
Other information: SMEs are important in the innovation process for this topic.
Open in call: FP7-ENERGY-2007-1-RTD

AREA ENERGY.3.4: BIOFUELS FROM ENERGY CROPS
For this Area, no topics are open in calls published in 2007.

AREA ENERGY.3.7: CROSS-CUTTING ISSUES

Topic ENERGY.2007.3.7.3: Standardisation and sustainability issues
Content/scope: Pre-normative research and standardisation of tradable solid, liquid and gaseous biofuels. Projects may also address CEN standardisation of the existing as well as of the new biofuels. Emphasis will be given to the development of standards and certification systems for the sustainable production of biofuels for transport.
Funding scheme: Coordination and Support Action (support type)
Expected impact: Establishment of European commodity markets for standardised, produced solid, liquid, and gaseous biofuels.
Other information:
Open in call: FP7-ENERGY-2007-2-TREN

ACTIVITY ENERGY.8: ENERGY EFFICIENCY AND SAVINGS

AREA ENERGY.8.1: EFFICIENT ENERGY USE IN THE MANUFACTURING INDUSTRY7

Topic ENERGY.2007.8.1.3: ***Manufacturing and process industries: Innovative energy efficient industrial processes***
Content/scope: Development of new and/or improved industrial processes with substantial energy savings in primary energy and increase in energy efficiency. Research and demonstration of new energy efficient concepts in industrial processes incorporating systems approach in the energy cycle as well as in the materials cycle taking into consideration reduced use of fossil fuels.
Funding scheme: Collaborative project with predominant demonstration component.
Expected impact: New or improved industrial processes with significantly improved energy and environmental performance and efficient use of natural resources.

Other information: Priority will be given to the projects incorporating also innovative systems approach.
Open in call: COOP-ENERGY-2007-2-TREN

Indivative Budget for workprogramme 2007 (Million €)

Call/ activity	RTD 2007* M€	TREN 2007* M€
FP7-ENERGY-2007-1-RTD **	109.3	
FP7-ENERGY-2007-1-TREN		128
FP7-ERANET-2007-RTD (see Annex 4) **	0	
General Activities (see Annex 4)	9.2	7.36
Other Activities[12]	4.3	0.56
Evaluation costs	1.0	1.2
Estimated total budget allocation	**123.8**	**137.1**

* Under the condition that the preliminary draft budget for 2007 is adopted without modifications by the budget authority.

** An amount from the 2008 budget is expected to be added to this call for which a new financing decision to cover the budget for that year will be requested at the appropriate time.

5.3. IMPLEMENTATION OF CALLS

Call title: Energy Call Part 1
Call identifier: FP7-ENERGY-2007-1-RTD
Date of publication[13]***:*** 22 December 2006
Deadline: 3 May 2007 at 17.00, Brussels local time
Indicative budget*:* 109.3 M€ from the 2007 budget

Call title: Energy Call Part 2
Call identifier: FP7-ENERGY-2007-2-TREN
Date of publication[18]***:*** 22 December 2006
Deadline: 3 May 2007 at 17.00, Brussels local time
Indicative budget: 128 M€ from the 2007 budget

5.4. INDICATIVE PRIORITIES FOR FUTURE CALLS

In 2008, the relatively small call FP7-ENERGY-2008-1-RTD will focus on:
– topics complementary to those in the first call;
– areas not well covered by the outcome of the first call;

– additional topics identified as being strategically important by technology platform SRAs;
– opportunities for Future and Emerging Technologies (FET), ERA-Nets and Specific International Cooperation Actions (SICA).

The next major call for research activities having a longer term perspective will be open in 2009 (Call FP7-ENERGY-2009-1-RTD).
The call FP7-ENERGY-2008-2-TREN will be open, inter alia, for "Large-scale Integration of Renewable Energy Supply and Energy Efficiency in Buildings: Eco-Building" (Area ENERGY.8.3), "Innovative Integration of Renewable Energy Supply and Energy Efficiency in large Communities: CONCERTO" (Area ENERGY.8.4) and gas networks (in Activity ENERGY.7).

5. THEME 6
ENVIRONMENT (INCLUDING CLIMATE CHANGE)

Funding schemes
The work programme will be implemented through a range of funding schemes as specified in each topic description. The following funding thresholds will apply to different types of projects:
Collaborative projects in this work programme have been divided into a) small or medium-scale focused research projects, and b) large-scale integrating projects:
- For small or medium-scale focused research projects, the requested Community contribution shall not exceed 3.5 million Euros, unless otherwise indicated in the topic description. For small or medium-scale focused research projects under the sub- activity *6.4.2 'Forecasting methods and assessment tools for sustainable development taking into account differing scales of observation'* the requested Community contribution shall not exceed 2 million Euros. - For large-scale integrating projects the requested Community contribution shall be from 4 up to 7 million Euros, unless otherwise specified in the topic description.
For Networks of Excellence, the requested Community contribution shall be from 4 up to 7 million Euros.
For "Research for the benefit of specific groups[13]" the requested Community contribution shall not exceed 2 million Euros. This funding scheme will be dedicated to develop scientific knowledge related to activities of civil society organisations (CSO) in order to contribute to public debate. Hence, the funding scheme supports research projects where the bulk of the research is carried out by RTD performers for the benefit of CSOs. *Civil society organisations* are considered to be any legal entity that is non-governmental, notfor- profit, not representing commercial interests, and pursuing a common purpose in the public interest. Professional associations and consultancy organisations are not considered as specific groups under this scheme. *RTD performers* are legal entities able to carry out research on the fields requested by CSOs. Examples of RTD performers are universities, research organisations and industrial companies, including research performing SMEs.

II CONTENT OF CALL IN 2007

Activity 6.3. ENVIRONMENTAL TECHNOLOGIES

Sub-activity 6.3.1 Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment
Indicative available budget: 38 M€

Area 6.3.1.2. Soil
ENV.2007.3.1.2.1. Development and improvement of technologies for data collection in (digital) soil mapping
Development, implementation and validation of new field, remote and proximal observation technologies capable to improve, accelerate and objectify the collection of soil data, allowing at the same time a non destructive approach. This action should provide improved technologies for measuring soil properties, including physical and hydrologic properties, capable to give information about several soil functions. Well known techniques, such as electromagnetic induction (EMI) or georadar, should be improved and validated, and other possible geophysical (such as magnetic or microseismic) and spectroscopic techniques should be explored. Data processing tools are needed for enhancement and correction of source data. The participation of industrial partners, and in particular of SMEs, is essential. The projects should support the implementation of the Soil Thematic Strategy.
(SME relevant and Policy relevant topic)
Funding scheme: collaborative projects (small or medium-scale focused research projects
Expected impact: *Improvement of spatial analysis of soils and soil functions, in relation to indicators for degradation threats. A substantial improvement in technologies for acquiring soil data is expected in terms of spatial resolution, measurement precision, reliable correlation with main soil functions and operational/economical feasibility.*
Call : *FP7-ENV-2007-1*

ENV.2007.3.1.2.2. Development of technologies and tools for soil contamination assessment and site characterization, towards sustainable remediation
Technologies and tools for site characterisation and monitoring of contaminated soils should be improved including combinations of geophysical systems, chemical analysis, statistical analysis, biomarkers and/or modelling with particular attention to less-invasive (e.g. minimize drilling) and depth-oriented tools, to bio-availability of contaminants and to spatio/temporalheterogeneity of soils. Tools for detection of local, primary or secondary sources should be developed in view of more source-oriented sustainable remediation technologies. This action should foresee the participation of industrial partners, and in particular of SMEs. The projects should support the implementation of the Soil Thematic Strategy.
(SME and Policy relevant topic)

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

Expected impact: *Improvement in effectiveness of remediation/mitigation technologies for contaminated sites through a more favourable cost/benefit ratio of site characterisation and monitoring, and a more precise and reliable site characterisation and monitoring design. The projects should support the implementation of the Soil Thematic Strategy.*
Call : *FP7-ENV-2007-1*

III IMPLEMENTATION OF CALLS
• Call identifier: *FP7-ENV-2007-1*
• Date of publication[30]: 22 December 2006
• Deadline: 2nd of May 2007 at 17:00, Brussels local time
• **Indicative budget:** *200 million EUR from the 2007 budget[32]*

Indicative budget for workprogramme 2007 (Million €)

	2007*
Call ENV 2007	200 M €**
General activities (cf. Annex 4)	16.1 M €
Other activities: • Evaluations (2 M €) • Programme impact assessment(0.28 M €) • Support to the 2007 Activities of the GEO Secretariat) (0.6 M €)	2.9 M €
Estimated total budget allocation	219 M €

* Under the condition that the preliminary draft budget for 2007 is adopted without modifications by the budget authority.
** This amount includes an indicative amount of up to € 4 M for the ERA-NETs foreseen under this Theme – See Annex 4 (Table 2 - Overview of Activities and Topics mentioned in Cooperation Themes which are part of the FP7-ERANET-2007 –RTD joint call).

6. THEME 7
TRANSPORT (INCLUDING AERONAUTICS)

Given the different structure and focus of the sectors, the theme is divided into 3 sub-themes:

AERONAUTICS and AIR TRANSPORT,
SUSTAINABLE SURFACE TRANSPORT,
GALILEO

Activities are to be addressed by topics and classified in two broad categories according to the degree of specification of the topic considered: “level 1" (generic activities) and "level 2” (specific activities).

Level 1
Topics in level 1, being generic, define broad fields of activity and will normally concern the three surface transport modes, unless differently specified in the text. They will encourage and enable technological synergies and technological transfer between transport modes. Proposals may be approached with some degree of flexibility (addressing only part of their content or combining them as required). Research and development activities within level 1 will contribute to the technological foundation of the sub-theme.

Level 2
Topics in Level 2, being specific, refer to well identified industrial, policy and socioeconomic matters. They are explicit in their formulation. They may for example give indications on the type of activity, the research approach, characteristics of the partnership and expected outcomes. Proposals addressing a level 2 topic will cover it in its entirety.

2. CONTENT OF CALL FOR 2007

ACTIVITY: 7. 2. 1. The greening of surface transport
AREA: 7.2.1.1 The greening of products and operations

THE FOLLOWING TOPICS ARE FOR *LEVEL 1*
SST.2007.1.1.1. Promoting the use of bio-fuels and alternative hydrocarbon fuels
New technologies and innovative solutions for the progressive introduction of biofuels and alternative hydrocarbon fuels.
Proposals will cover one or more of the following subjects:
1. adaptation and optimisation of existing power trains (based on gasoline or diesel), systems (including after-treatment), components and materials;
2. new power train concepts with emphasis on efficiency and environmental impact, covering power ranges for al transport modes;
3. effective, safe and clean delivery of these fuels at distribution points. International Cooperation with Brazil, USA and India is suggested.
Funding scheme: Collaborative Projects small or medium-scale focussed research, Coordination and Support actions aiming at coordinating research activities
Open in call: FP7-SUSTAINABLE SURFACE TRANSPORT (SST)-2007-RTD-1

SST.2007.1.1.2. Vehicle/vessel and infrastructure technologies for optimal use of energy

Vehicle/vessels and infrastructure technologies (excluding research on power-trains which are covered in previous topics) to further reduce energy consumption.

Proposals will cover one or more of the following subjects:

1. advanced low mass, low friction and low rolling resistance concepts and materials applied to components and structures for vehicles and vessels;
2. fluid-dynamic and aero-dynamic analysis and solutions for drag reduction;
3. exploiting additional natural and non-polluting sources of energy such as wind or solar energy;
4. improved interactions between vehicles/vessels and infrastructure (including the surrounding medium) for minimal energy consumption and wash (for high speed vessels);
5. smart components and auxiliary systems to reduce energy consumption and/or which make use of energy harvesting;
6. design tools and methodologies for optimised overall energy efficiency and life cycle performance.

Funding scheme: Collaborative Projects small or medium-scale focussed research, Coordination and Support actions aiming at coordinating research activities

Open in call: FP7-SUSTAINABLE SURFACE TRANSPORT (SST)-2007-RTD-1

ACTIVITY: 7.2.5. STRENGTHENING COMPETITIVENESS

AREA: 7.2.5.1 Competitive industrial processes

THE FOLLOWING TOPICS ARE FOR *LEVEL 1*

SST.2007.5.1.1 Competitive product development

Advanced design tools and methodologies for modelling, simulation, prototyping and testing of surface transport products.

Activities will address one or more of the following subjects:

1. reduction of development time and associated cost;
2. increased product modularity;
3. product life cycle considerations and system optimisation;
4. goal based design (e.g. minimisation of life cycle costs such as manufacturing or maintenance costs, comfort, ease of operation).

Funding scheme: Collaborative Projects small or medium-scale focussed research, Coordination and Support actions aiming at coordinating research activities

Open in call: FP7-SUSTAINABLE SURFACE TRANSPORT (SST)-2007-RTD-1

7.4 GALILEO

Several Areas

Implementation of calls for 2007

The work programme has the detail of five calls that will be open during 2007:
FP7- AERONAUTICS and AIR TRANSPORT (AAT) - 2007- RTD-1
FP7- AERONAUTICS and AIR TRANSPORT (AAT) – 2007 – TREN-1
FP7- SUSTAINABLE SURFACE TRANSPORT (SST) – 2007- RTD-1
FP7- SUSTAINABLE SURFACE TRANSPORT (SST) – 2007- TREN-1
FP7- TRANSPORT (TPT) – 2007- RTD-1

- **Call title: FP7- SUSTAINABLE SURFACE TRANSPORT (SST) – 2007- RTD-1**
- Call identifier: FP7- SST – 2007- RTD-1
- Date of publication: **22 December 2006**
- Deadline[40]: **3 May 2007 at 17.00h (Brussels local time)**
- **Total Indicative budget[41] [42]: 153.48 *M €***

4. INDICATIVE PRIORITIES FOR FUTURE SUSTAINABLE SURFACE TRANSPORT-RTD CALLS (2008)

Clean and energy efficient gasoline and diesel power trains
Electric power-trains and hybrid technology
New vehicle concepts for the delivery of goods
Advanced and cost effective infrastructure construction and monitoring concepts
Innovative product and system concepts
Competitive transport operations

Indicative Budget for the work programme 2007

European Commission's DG Research	**2007***
FP7- AERONAUTICS and AIR TRANSPORT (AAT) - 2007- RTD-1 **	153.48M€**
FP7- SUSTAINABLE SURFACE TRANSPORT (SST) – 2007- RTD-1 **	153.48M€** / ***
FP7- TRANSPORT (TPT) – 2007- RTD-1	12M€
Total for RTD calls	**318.96 M €**
General activities (cf. Annex 4)	25.788M€
Other activities: • Evaluations (1 M €) • Programme impact assessment • Information/ communication • JTI preparatory activities	3M€
Estimated total budget allocation	347.75M€