



THE SIXTH FRAMEWORK PROGRAMME

The Sixth Framework Programme covers Community activities in the field of research, technological development and demonstration (RTD) for the period 2002 to 2006

**Work Programme for the Specific Programme for RTD:
“Integrating and Strengthening the European Research Area”**

The Thematic Priority

Information Society Technologies



Work Programme

First Update

(Commission Decision C(2004)2002 of 10 June, 2004)

(Amendments to “Priority 2: Information Society Technologies” part of Commission Decision C(2002)4789 of 9 December, 2002)

<http://www.cordis.lu/ist>

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1. Introduction

The Information Society Technologies (IST) 2003-04 Work Programme covers the activities for two years, 2003 and 2004, of the IST priority thematic research area of the specific programme for “integrating and strengthening the European Research Area” (SP1¹). It defines the priorities for the calls for proposals in these two years, the implementation plan and the criteria that will be used for evaluating proposals responding to these calls.

The IST 2003-04 Work Programme was adopted on 9 December 2002² and four calls for proposals have been published so far:

Three calls for proposals have already closed:

- Call 1, closed on 24.04.2003
- Call 2, closed on 15.10.2003
- Joint Call with thematic priority 3 on “Manufacturing, products and services engineering in 2010“, closed on 24.04.2003 (1st stage) and 16.09.2003 (2nd stage)

One call for proposals is still open:

- Continuous submission call “Future and Emerging Technologies (FET) - Open domain“, closing 31.12.2004

This first update sets out the detailed priorities of another three calls for proposals to be published in 2004:

- **IST Call 3, closing 22.09.2004**
- **Second Joint Call between thematic priorities 2 and 3, closing 14.10.2004**
- **Call for Future and Emerging Technologies (FET) - Proactive initiatives, closing 22.09.2004**

These priorities are based on the set of Strategic Objectives for 2003 and 2004 as described in the IST 2003-04 Work Programme adopted by Commission Decision on 9 December, 2002.

The IST 2003-04 Work Programme Sections 2.3 “Detailed description of the WP content” and 2.7 “Call fiches” are amended by adding the sections that follow.

¹ OJ L 294, 29.10.2002.

² C(2002)4789, see Information Society Technologies on http://www.cordis.lu/fp6/sp1_wp.htm.

2. Objectives and Technical Content

IST Call 3

The objectives are to launch complementary accompanying actions to improve the participation of organisations from the New Member States and the Associated Candidate Countries, to prepare for future international co-operations, and to improve the networking and co-ordination of national, regional and European research activities.

- **2.3.6.1: To stimulate, encourage and facilitate the participation of organisations from the New Member States (NMS)³ and the Associated Candidate Countries (ACC)⁴ in the activities of IST.**

The focus is on (i) the establishment and reinforcement of networks of research organisations from the NMS and the ACC with organisations from the other Member States, (ii) information and awareness events, and (iii) the promotion of research competencies in the NMS and the ACC.

Activities could include (i) the organisation of brokerage events and seminars where researchers - industrial and academic - from the NMS and the ACC can meet researchers from the other Member States with a view to participating in proposals, (ii) the organisation of conferences with researchers from across Europe, and (iii) the creation, maintenance, promotion and linking of databases of researchers and industrial and academic research organisations in the the NMS and the ACC which contain information that would facilitate partner searching for the creation of consortia.

Activities are expected to have a pan-European focus on thematic issues related to one or several IST Strategic Objectives⁵.

- **2.3.6.2: To prepare for future international co-operation in IST.**

The objectives are (i) to enable European researchers to access knowledge, skills, technology and facilities available outside the EU, (ii) to strengthen Europe's participation in international R&D activities and accompanying measures, and (iii) to exploit R&D and policy complementarities so as to explore mutual benefits of the co-operation and increase access to market opportunities.

Emphasis is put on activities which are relevant to the following groups of third countries⁶ : Developing countries; Mediterranean partner countries; Russia and the other New Independent States; and Western Balkan countries.

Activities could include organisation of workshops or other regional/local events to build constituencies and raise awareness; dissemination, benchmarking and

³ New Member States of the EU: Cyprus, Czech Rep., Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

⁴ Associated Candidate Countries: Bulgaria, Romania and Turkey.

⁵ See section 2.3 of the IST 2003-04 Work Programme.

⁶ The list of target countries for specific measures in support of international co-operation is provided in Annex C of the SP1 Work Programme (see General Annexes / C: List of Groups of INCO target countries on http://www.cordis.lu/fp6/sp1_wp.htm).

validation of research results in IST; promotion of European technologies; exchange of best practices; technology watch exercises; mapping of R&D resources and capabilities; and activities related to standards and interoperability issues.

Activities are expected to focus on thematic issues related to one or several IST Strategic Objectives⁷.

- **2.3.6.3: To progress towards the achievement of the objectives of a European Research Area in a given IST field.**

Support is provided for the improved networking and co-ordination of national, regional and European research policies, programmes and funding schemes related to one or several IST Strategic Objectives⁸, aiming at improved integration of European IST research.

Activities could include benchmarking of national, regional, European and third country research, roadmapping, development of long-term shared visions for research and exploitation, stimulation of future co-ordinated or common programme proposals, and opening up of national programmes.

As an indication of the granularity of a field and the scale of operations and ambition, the expectation is that a total of 10-15 fields, related to one or several IST Strategic Objectives, will be addressed by the selected actions. Fields that cut across objectives and disciplines are encouraged.

Second joint call between thematic priorities 2 and 3

The objectives are to address new emerging objectives and research tasks through a set of inter-disciplinary R&D areas that further align and co-ordinate priority research tasks within IST Strategic Objectives and between IST and FP6 thematic priority 3.

- **IST-NMP-1: Integrating Technologies for the Fast and Flexible Manufacturing Enterprise**

The RTD activities under this joint call aim at enhancing European leadership in product engineering and manufacturing system development. Significant challenges have been identified for manufacturing industries⁹, in particular the increasing product variants and service content of products becoming a key factor of competitive advantage and sustainability. Further needs exist for systems and concepts capable of integrating customer requirements that drive all subsequent re-engineering of products and processes enriched with service related features.

The RTD activities under this joint call should stimulate industrial breakthroughs by integrating IST and NMP technologies and focus in particular on three topics:

- Innovative mechatronics and advanced control and networking of embedded systems for dynamic reconfiguration of complex assembly, production and manufacturing processes;

⁷ See section 2.3 of the IST 2003-04 Work Programme

⁸ See section 2.3 of the IST 2003-04 Work Programme

⁹ e.g. as discussed in Manufuture2003 document, see <http://www.manufuture.org>

- Multidisciplinary and dynamic work environments facilitating multi-stakeholder involvement and life cycle management of production and manufacturing systems, products and services;
- Innovative approaches to customisation fulfilment, logistics and maintenance via mobile miniature and wireless devices or smart tags.

Integrated Projects are expected to cover holistically several of the above mentioned aims and topics in demonstrating superior cost efficiency, performance and robustness of new concepts of manufacturing systems. Significant cross-sectoral industrial participation and reinforcement of knowledge communities is required which could lead to the development of long-term European visions on the future of manufacturing. Such projects, based on strong industry-research partnerships, should encompass several activities within the RTD lifecycle: i.e. foresight, basic research, technological development, validation and benchmarking, take-up (in particular by SMEs), training, impact assessment, etc. Furthermore, the new manufacturing concepts should be characterised by modularity and intelligence, thus, enabling flexibility and reconfigurability to be part of the knowledge-based and agile manufacturing enterprise.

Specific Targeted Research Projects shall only be used to stimulate radical technological innovation and to facilitate RTD collaborations on the above mentioned research topics within an international context¹⁰.

Specific Support Actions shall support the development of better research, innovation and education, integrated activities related to the future of agile manufacturing in Europe, and efficient exchange of information on related fields within an international context.

• **IST-NMP-2: Bio-sensors for Diagnosis and Healthcare**

The long-term objective is the development of new medical instruments and/or intelligent diagnosis equipment for the healthcare of the future, using advanced biosensors (including biological sensors). In this context, significant applications could come from the integration of technological developments - in particular of biosensors and smart and hybrid materials that may interact with their surrounding, precision engineering, micro- and nano-fluidics, and opto / electromagnetic methods with greater knowledge of the interactions between biological and non-biological systems. Innovative biomedical sensing systems can, in combination with information technologies, offer both a reliable and easy-to-use basis for cost effective healthcare systems. Drug screening is not included. Ethical issues and societal aspects should also be taken into due consideration.

Proposals should address the following:

- Research to support the development of technological demonstrators that offer enhanced diagnostic capabilities meeting requirements of cost and disposability. These should take into account all aspects of the development life cycle of biomedical sensors and health monitoring systems including clinical validation, networking and communication capabilities.

¹⁰ http://europa.eu.int/comm/research/industrial_technologies/07-11-02_internationalcoop_en.html
<http://www.cordis.lu/ist/fp6-international/home.html>

- Radical improvement of sensitivity, accuracy, precision, stability, selectivity, reproducibility, reliability, cost and where necessary sterilisation and bio-compatibility of bio-sensing systems.
- Integration activities aiming at exploring recent advances in the fields of Information Society Technologies (IST), Nanotechnologies and nanosciences, knowledge-based multifunctional Materials and new Production processes and devices (NMP), and molecular biology for increasing molecular (MR) and cellular recognition (CR) capacities, thus supporting the development of the next generation of MR and CR devices.
- Activities addressing health issues in a holistic manner using and/or including the development of bio-sensor-based integrated systems (non-invasive or minimally invasive, with embedded data treatment and networking/communication capabilities) allowing interactions with their environment and implementing the vision of Ambient Intelligence.

Integrated Projects should aim at developing biosensor-based integrated systems and related technological demonstrators that include all aspects of the lifecycle of such systems, and remove technological and socio-economic barriers to ensure their successful integrated and objective-driven use. Development of novel diagnostic systems should include safety aspects, strong control parameters such as standards, calibration procedures and mechanisms for international comparability and normalisation of results. Potential activities could include contributions to providing services to the (bio-) medical research community and industry, and could also contribute to the development of associated skills. Whenever appropriate, societal, health, environmental, ethical and regulatory issues, and in particular validation and metrology aspects, should be addressed. Toxicological studies should also be included, where these are relevant. A high level of industrial participation is required, in particular by SMEs. Projects should further demonstrate the feasibility of broad long-term industrial take-up.

Specific Targeted Research Projects should focus on research at the frontier of knowledge to solve well-identified scientific/technical problems related to acquisition of accurate data for healthcare or to explore new concepts for nanotechnology biosensor-based integrated systems for health.

Specific Support Actions should contribute to the activities of the research community, e.g. by developing RTD roadmaps, benchmarking European progress in comparison with the international context, and disseminating information in the most innovative domains and by doing so to contribute to the promotion of further developments in the area of nanotechnology-based biosensors.

- **IST-NMP-3: Materials, Equipment and Processes for Production of Nano-Photonic and Nano-Electronic Devices**

The challenge of mastering nano-electronics and nano-photonics science and technologies at an industrial scale (i.e. aiming at low cost mass production capability) is of utmost strategic importance for the competitiveness of the European industry in a global context. These technologies will provide enormous opportunities for the European industry to create new reliable and environmentally friendly products for application areas such as security, communication, medicine and the environment. They will offer strongly increased

computation and communication power, with low energy consumption and improved portability. The integration of knowledge from nano-electronics, -optics and -photonics, materials science, nano-sciences and nano-manufacturing requires highly multi-disciplinary skills. Dedicated R&D in spintronics is excluded from the present call.

The focus is on:

- Research on nano-electronic and nano-photonic/optical materials (e.g. compound semiconductors, functional polymer, molecular electronics materials¹¹ and glasses) and related fabrication processes and their functional validation in manufacturable nano-photonic and nano-electronic integrated devices;
- Research on integrated non-conventional nano-MOS logic and memory devices, on photonics/nano-electronics integration technologies for functional devices, and on related production technologies;
- Research on materials (including e.g. starting materials) processes and equipment for very advanced nano-structuring and nano-patterning technologies (ITRS 32 nm node and beyond) required for the high volume production of nano-electronic and nano-photonic integrated circuits. Work on maskless nano-patterning for low to medium volume production is welcome.

Integrated Projects should gather the participation of the relevant stakeholders across the industrial supply chain. Integrated Projects shall thereby obtain the critical mass needed to facilitate a possible future market introduction and stimulate a widespread adoption of the technologies and sciences being developed. A high level of industrial participation is required.

Specific Targeted Research Projects should address research at the frontier of knowledge aiming at radical innovation in the long term, in particular benefiting of nanotechnology interdisciplinary work.

Specific Support Actions should contribute to the activities of the research community, e.g. by developing RTD roadmaps, benchmarking European progress in comparison with the international context, and disseminating information in the most innovative domains and by doing so to contribute to the promotion of further developments in the area of photonic devices and technologies.

Future and Emerging Technologies (FET) – Proactive Initiatives

FET proactive initiatives aim at focusing resources on visionary and challenging long-term goals that are timely and have strong potential for future impact.

• 2.3.4.2.(iv) : Quantum Information Processing and Communications

Recent technological and experimental progress has allowed an unprecedented capacity of control at the atomic level. This has given rise to an effort to build a

¹¹ Proposals submitted in response to this objective and that of the IST FET Proactive Initiative “2.3.4.2. (vi) Emerging Nanoelectronics” will be evaluated in a co-ordinated way to ensure complementarity.

quantum computer that would exploit quantum phenomena such as entanglement, up to now not accessible to experiments. Quantum computers hold the promise for solving efficiently some computationally hard problems, like e.g. large integer factorisation or the simulation of quantum systems.

This call follows two earlier calls which led to encouraging results promising scalable quantum computers in the future; quantum algorithms were already successfully implemented on small size (less than 10 qubit) quantum computers. At present, it is still too early to decide which implementation will ultimately be the most successful, (candidates are among others neutral atoms, ions, superconducting gates, and q-dots) nor are all fundamental problems, like controlling de-coherence and finding promising quantum algorithms, fully understood. The present initiative wants to go one step further towards the practical realisation of a quantum computer.

The objective of this initiative is to contribute to building systems that successfully implement quantum algorithms on small scale systems - including writing, processing and reading of qubits.

The research shall be carried out by interdisciplinary teams that integrate as much as possible the theoretical and the experimental aspects. Only approaches that will ultimately be scalable should be considered. Highly important for achieving scalability will be to develop novel experimental schemes to overcome de-coherence, refined quantum-error correction protocols and new protocols for networking of qubits. A possible approach to scalability could also be ‘hybrid’ systems obtained by interfacing qubit ‘memories’ (atoms, Q-dots, squids) and carriers of quantum information (photons, phonons, electrons).

Work on developing few qubit applications is highly encouraged, for example in the area of metrology or simulators of quantum systems.

Theoretical work should aim at further developing *quantum information theory*. Specific problems to be addressed include physical aspects of quantum information for elucidating concepts such as multi-particle entanglement, work on communication complexity, relation with classical computational complexity theory, etc. In particular work on the development of new quantum algorithms, new schemes for error correction, and protocols for distributed computing, and work in new areas like quantum random walks, etc. is highly encouraged. It should promote a thorough exchange between scientists working in the areas of physics and computer science.

This initiative should be implemented exclusively through Integrated Projects.

Background documents are available at www.cordis.lu/ist/fet/qipc.htm.

- **2.3.4.2.(v) : Global Computing**

Global computing refers to computation over “global computers”, i.e., computational infrastructures available globally and able to provide uniform services with variable guarantees for communication, co-operation and mobility, resource usage, security policies and mechanisms, etc., with particular regard to exploiting their universal scale and the programmability of their services. As the scope and computational power of global infrastructures continues to grow, in order to harvest their potential benefits, and ultimately improve our quality of life, a vision needs to be realised which goes well beyond incremental and

disconnected improvements of diverse (and often incompatible) implementations. The Global Computing initiative reinforces and complements previous FET activities in the area.

The key aim of the Global Computing initiative is to define innovative theories, computational paradigms, linguistic mechanisms and implementation techniques for the design, realisation and deployment of global computational environments and their application and management. The expected result in the long term is to achieve real, integrated global computing in a wide range of application scenarios by providing foundational advances on suitably large classes of global computers, together with the integration of methods and concepts necessary to advance global computing as a whole.

The research should focus on common characteristics representing a family of potential or actual global computers described by appropriate abstractions. The nature of these abstractions is not prescribed in the call, although they can generally be referred to as “overlay computers”, i.e., abstractions that can be implemented on top of global computers to yield enhanced classes of global computers that are programmable and computationally complete in their application domain.

Proposals should present a research approach aiming at substantial integration between theory, systems building and experimentation, following a foundational approach typical of computer science research. They should tackle all the four issues of *security*, *resource usage and management*, *scalability*, and *distribution transparency*, all intended in a broad sense and in the context of global computing, as they are pivotal to realising the aim of the initiative.

The proposed research should aim to devise theories and techniques concerned with these four issues that are either applicable to global computing in general, and can therefore form the conceptual backbone for the whole initiative, or that are applicable to specific classes of global/overlay computers, where this is fully justified. In doing so, the research is encouraged to find connections between overlay computers, address common characteristics, and provide common solutions.

Background documents are available at www.cordis.lu/ist/fet/gc.htm.

- **2.3.4.2.(vi) : Emerging Nanoelectronics**

This initiative complements mainstream IC developments with advanced research in hybrid and molecular electronics, and prepares the bases for an extension of integrated circuit technology beyond the limits of CMOS scaling. This initiative covers a time horizon beyond 2009, corresponding to that covered in the “Emerging Research Devices” (ERD) section of the ITRS roadmap. The scope is however limited to a number of non-CMOS options listed in the ERD document.

Many effects characteristic of molecular and other nanometer-scale structures have recently been discovered or demonstrated, paving the way for technological developments complementing those on the mainstream semiconductor platforms. The emerging nanoelectronics initiative aims at consolidating and further advancing this research and to prepare the bases for industrial research and development programmes on non-CMOS nanometre technologies in information society applications.

Three long-term directions are proposed to focus European-level research.

1. Hybrid molecular electronics to develop new functions or to improve the implementation of known functions, by incorporating new molecular-scale developments on appropriate submicron scale semiconductor platforms.
2. One-dimensional structures such as nanotubes or nanowires for the development of devices, functions, interconnections, etc.
3. Single molecules for the development of reproducible functions and to compose circuits. This research is likely to require progress on the understanding of electrical characteristics of single molecules and contacts. Special interest is given to organic molecules, their potential for self-assembly and the multidisciplinary research they would motivate.

Each proposal is expected to include elaboration of recent breakthroughs into reproducible physical prototypes and accurate simulations, forward looking research into circuits and architectures, as well as more basic research into topics such as self- or directed assembly. Proposals should identify long-term aims and expected objectives within the duration of the project. They should propose merit criteria where the proposed developments would compete with mainstream approaches or complement these.

Proposals for multidisciplinary integrated projects are expected for each of the research themes described above. These are expected to include, beyond the research work, also contribution to roadmaps, training, dissemination and exploitation activities. Industrial participation is welcome as research performers or, in the case of upstream projects, as advisers for success criteria and their implementation. Proposals for networks of excellence would complement the integrated projects and could, among other integration activities, address the requirement for access to a modelling infrastructure and to advanced experimental facilities open to non-standard processes.

Background documents are available at www.cordis.lu/ist/fet/nid.htm.

- **2.3.4.2.(vii) : Bio-inspired Intelligent Information Systems**

‘Reverse engineering’ of the brain could overcome the present obstacles to truly intelligent information systems. This initiative aims at decoding brain processes and applying the knowledge for new information technologies. It reinforces and complements previous FET initiatives in neuro-IT.

The objective is to explore new avenues in the design of intelligent information systems that attribute meaning to complex patterns of sensory stimuli and generate sequences of elementary actions that satisfy high-level goals. The systems should show autonomous growth in perceptual, motor and cognitive abilities, and their performance must be assessed in realistic scenarios.

The ultimate aim is to build systems that exhibit flexible, autonomous, goal-directed behaviour in response to changes in internal and external conditions.

The design and construction of novel intelligent information systems will focus on:

1. multidisciplinary characterisation of computational properties, structure and other physical constraints of large assemblies of interconnected neurones that

process information in the perceptual, motor or cognitive domains and serve as a model for new IT architectures and design;

2. mechanisms of evolution, development and plasticity that support self-construction, and self-repair of artificial or hybrid (biological/artificial) intelligent information processing systems; including exploration of hardware and materials suitable for interfacing to the nervous system, or for implementing sensors, processors and actuators in modifiable, adaptive, growing systems;
3. integrated control architectures that generate and exploit world- and/or self-awareness.

The research should be carried out by inter-disciplinary teams that integrate engineering, neurosciences and other relevant disciplines. Proposals should have ambitious objectives and aim at breakthroughs that go well beyond the state of the art and address one or several of the foci described above.

Background documents are available at www.cordis.lu/ist/fet/bioit.htm.

3. Call Information

IST Call 3

1) Specific programme: Integrating and Strengthening the European Research Area

2) Thematic priority/domain: Information Society Technologies (IST)

3) Call title: Call 3 of the IST priority

4) Call identifier: FP6-2004-IST-3

5) Date of publication¹²: 15.06.2004

6) Closure date(s)¹³: 22.09.2004 at 17.00 (Brussels local time)

7) Total indicative budget: 28 million Euro of which

- 10 million Euro for Objective 2.3.6.1
- 8 million Euro for Objective 2.3.6.2
- 10 million Euro for Objective 2.3.6.3

8) Areas and instruments

Proposals are invited to address the following objectives:

- **2.3.6.1: To stimulate, encourage and facilitate the participation of organisations from the New Member States (NMS) and the Associated Candidate Countries (ACC) in the activities of IST.**
- **2.3.6.2: To prepare for future international co-operation in IST.**
- **2.3.6.3: To progress towards the achievement of the objectives of a European Research Area in a given IST field.** (See point 10 below for restriction to participation for Co-ordination Actions.)

The objectives are open for actions using the following instruments:

Objective	Instrument(s)
2.3.6.1	Specific Support Actions
2.3.6.2 and 2.3.6.3	Co-ordination Actions, Specific Support Actions

9) Minimum number of participants¹⁴

¹² The Director-General responsible for the call may publish it up to one month prior to or after the envisaged date of publication.

¹³ Where the envisaged date of publication is anticipated or delayed (see footnote above), closure date(s) will be adjusted accordingly in the published call for proposals.

¹⁴ MS = Member States of the EU; AS (incl. ACC) = Associated States; ACC: Associated candidate countries. Any legal entity established in a Member State or Associated State and which is made up of the requested number of participant may be the sole participant in an indirect action.

Objective	Minimum number
All objectives	For Co-ordination Actions: Three independent legal entities from three different MS or AS, with at least two MS or ACC. For Specific Support Actions: One legal entity.

10) Restriction to participation

Objective	Restriction
2.3.6.1 and 2.3.6.2	No restriction.
2.3.6.3	For Co-ordination Actions : The minimum number of participants must include only: (i) public bodies responsible for financing or managing research activities carried out at national or regional level, (ii) other national or regional organisations that finance or manage such research activities, or (iii) bodies operating at European level that include as part of their mission the pan-European co-ordination of nationally-funded research. The following legal entities may participate without restriction in addition to the minimum number of participants: (a) charities or other private organisations, which also manage research programmes that are strategically planned and executed at national or regional level, or (b) key participants in national or regional research activities who bring technical expertise in support of activities such as roadmapping or development of long-term shared visions. For Specific Support Actions: No restriction.

11) Consortium agreement

Participants in RTD actions resulting from this call are required to conclude a consortium agreement.

12) Evaluation procedure:

The evaluation shall follow a one-stage procedure. Proposals will not be evaluated anonymously.

13) Evaluation criteria

See section 2.5 of the IST 2003-04 Work Programme¹⁵.

14) Indicative evaluation and selection delays

¹⁵ Cf. Information Society Technologies on http://www.cordis.lu/fp6/sp1_wp.htm.

Evaluation results are estimated to be available within two months after the closure date.

Second joint call between thematic priorities 2 and 3

1) Specific programme: Integrating and Strengthening the European Research Area

2) Thematic priorities/domains: Thematic priority 2: “Information Society Technologies” (IST) and thematic priority 3: “Nanotechnologies and nanosciences, knowledge-based multifunctional materials, and new production processes and devices” (NMP)

3) Call title: Second Joint Call between thematic priorities 2 and 3

4) Call identifier: FP6-2004-IST-NMP-2

5) Date of publication¹⁶: 15.06.2004

6) Closure date(s)¹⁷: 14.10.2004 at 17.00 (Brussels local time)

7) Total indicative budget: 180 million Euro with, indicatively, a balanced breakdown of funds between the three different objectives (joint budget between Priority 2 and Priority 3).

8) Areas and instruments

Proposals are invited to address the following objectives:

- **IST-NMP-1: Integrating Technologies for the Fast and Flexible Manufacturing Enterprise**
- **IST-NMP-2: Bio-sensors for Diagnosis and Healthcare**
- **IST-NMP-3: Materials, Equipment and Processes for Production of Nano-Photonic and Nano-Electronic Devices**

The objectives are open for actions using the following instruments:

Objective	Instrument(s)
All objectives	Integrated Projects, Specific Targeted Research Projects, Specific Support Actions

Industry is expected to take a leading role in the Integrated Projects and the Specific Targeted Research Projects.

9) Minimum number of participants¹⁸

¹⁶ The Director-Generals responsible for the call may publish it up to one month prior to or after the envisaged date of publication.

¹⁷ Where the envisaged date of publication is anticipated or delayed (see footnote above), closure date(s) will be adjusted accordingly in the published call for proposals.

¹⁸ MS = Member States of the EU; AS (incl. ACC) = Associated States; ACC: Associated candidate countries. Any legal entity established in a Member State or Associated State and which is made up of the requested number of participant may be the sole participant in an indirect action.

Objective	Minimum number
All objectives	<p>For Integrated Projects and Specific Targeted Research Projects:</p> <p>Three independent legal entities from three different MS or AS, with at least two MS or ACC.</p> <p>For Specific Support Actions:</p> <p>One legal entity.</p>

10) Restriction to participation

None.

11) Consortium agreement

Participants in Integrated Projects resulting from this call are required to conclude a consortium agreement.

12) Evaluation procedure:

The evaluation shall follow a one-stage procedure. Proposers are required to respect the maximum number of pages (font size 12) as described in the Guide for Proposers. Proposals will not be evaluated anonymously.

13) Evaluation criteria

See Annex B of the work programme for the applicable criteria per instrument.

14) Indicative evaluation and selection delays

Evaluation results are estimated to be available within two months after the closure date.

Future and Emerging Technologies (FET) – Proactive Initiatives

1) Specific programme: Integrating and Strengthening the European Research Area

2) Thematic priority/domain: Information Society Technologies (IST)

3) Call title: Future and Emerging Technologies - Proactive Initiatives

4) Call identifier: FP6-2004-IST-FETPI

5) Date of publication¹⁹: 15.06.2004

6) Closure date(s)^{20,21}: 22.09.2004 at 17.00 (Brussels local time)

7) Total indicative budget: 80 million Euro

8) Areas and instruments

Areas addressed in the call are:

- **2.3.4.2.(iv) : Quantum Information Processing and Communications**
- **2.3.4.2.(v) : Global Computing**
- **2.3.4.2.(vi) : Emerging Nanoelectronics**
- **2.3.4.2.(vii) : Bio-inspired Intelligent Information Systems**

The areas are open for actions using the following instruments:

Area	Instrument(s)
2.3.4.2.(iv)	Integrated Projects
2.3.4.2.(v), 2.3.4.2.(vi), 2.3.4.2.(vii)	Integrated Projects, Networks of Excellence ²²

9) Minimum number of participants²³

Area	Minimum number
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¹⁹ The Director-General responsible for the call may publish it up to one month prior to or after the envisaged date of publication.

²⁰ Where the envisaged date of publication is anticipated or delayed (see footnote above), closure date(s) will be adjusted accordingly in the published call for proposals.

²¹ Pre-proposals may be submitted by e-mail or fax at any time up to 01/07/2004

²² See section 2.3.4.2. of the IST 2003-04 Work Programme.

²³ MS = Member States of the EU; AS (incl. ACC) = Associated States; ACC: Associated candidate countries. Any legal entity established in a Member State or Associated State and which is made up of the requested number of participant may be the sole participant in an indirect action.

All areas	Three independent legal entities from three different MS or AS, with at least two MS or ACC
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10) Restriction to participation

None.

11) Consortium agreement

Participants in RTD actions resulting from this call are required to conclude a consortium agreement.

12) Evaluation procedure:

The evaluation shall follow a one-stage procedure. Proposals will not be evaluated anonymously.

13) Evaluation criteria

See section 2.5 of the IST 2003-04 Work Programme²⁴.

14) Indicative evaluation and selection delays

Evaluation results are estimated to be available within two months after the closure date.

²⁴ See Information Society Technologies on http://www.cordis.lu/fp6/sp1_wp.htm.