

## COUNCIL DECISION

of 30 September 2002

**adopting a specific programme for research, technological development and demonstration:  
'structuring the European Research Area' (2002–2006)**

(2002/835/EC)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 166 thereof,

Having regard to the proposal from the Commission <sup>(1)</sup>,Having regard to the opinion of the European Parliament <sup>(2)</sup>,Having regard to the opinion of the Economic and Social Committee <sup>(3)</sup>,

Whereas:

- (1) In accordance with Article 166 (3) of the Treaty, Decision No 1513/2002/EC of the European Parliament and the Council concerning the Sixth Framework Programme of the European Community for research, technological development and demonstration activities, contributing to the creation of the European Research Area and to innovation (2002–2006) <sup>(4)</sup> (hereinafter referred to as the 'framework programme') is to be implemented through specific programmes that define detailed rules for their implementation, fix their duration and provide for the means deemed necessary.
- (2) The framework programme is structured in three main blocks of activities, 'focusing and integrating Community research', 'structuring the European Research Area' and 'strengthening the foundations of the European Research Area', the second of which should be implemented by this specific programme.
- (3) The rules for the participation of undertakings, research centres and universities and for the dissemination of research results, for the framework programme (hereinafter referred to as 'the rules for participation and dissemination') should apply to this programme.
- (4) As provided for under Article 170 of the Treaty, this programme is open to the participation of countries having concluded the necessary agreements to this effect, and is also open on the project level, and on the basis of mutual benefit, to the participation of entities from third countries and of international organisations for scientific cooperation.

- (5) In implementing this programme, emphasis should be given to the needs of SMEs and encouraging their participation.
- (6) Research activities carried out within this programme should respect fundamental ethical principles, including those which are reflected in the Charter of Fundamental Rights of the European Union.
- (7) Following the Commission Communication 'Women and Science', the Council Resolution of 20 May 1999 on women and science <sup>(5)</sup> and the Resolution of the European Parliament of 3 February 2000 on this scheme, an action plan is being implemented in order to reinforce and increase the place and role of women in science and research, and further enhanced action is needed.
- (8) Participation in the activities of this programme will be encouraged through publication of the necessary information on content, conditions and procedures, to be made available in a timely and thorough manner to potential participants, including those from the Associated Candidate Countries and other Associated Countries. Specific activities will be undertaken in support of participation of scientists and institutions from developing countries, Mediterranean countries including the Western Balkans as well as Russia and the Newly Independent States (NIS).
- (9) This programme should be implemented in a flexible, efficient and transparent manner, taking account of relevant interests, in particular of the scientific, industrial, user and Community policies. The research activities carried out under the programme should be adapted where appropriate to the needs of Community policies and to scientific and technological developments.
- (10) The participation of the outermost regions in Community RTD actions through appropriate mechanisms adopted to their particular situation should be facilitated.

<sup>(1)</sup> OJ C 181 E, 30.7.2002, p. 72.

<sup>(2)</sup> Opinion delivered on 12 June 2002 (not yet published in the Official Journal).

<sup>(3)</sup> OJ C 221, 17.9.2002, p. 97.

<sup>(4)</sup> OJ L 232, 29.8.2002, p. 1.

<sup>(5)</sup> OJ C 201, 16.7.1999, p. 1.

- (11) The measures necessary for the implementation of this Decision should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission<sup>(1)</sup>.
- (12) The Commission should in due course arrange for an independent assessment based on comprehensive implementation data to be conducted concerning the activities carried out in the fields covered by this programme bearing in mind its contribution to the creation of the European Research Area, which will be done in a spirit of openness with respect to all the relevant actors.
- (13) The Scientific and Technical Research Committee (CREST) has been consulted on the scientific and technological content of the programme,

HAS ADOPTED THIS DECISION:

*Article 1*

1. In accordance with Decision No 1513/2002/EC (hereinafter referred to as the 'framework programme', a specific programme on structuring the research area (hereinafter referred to as the 'specific programme') is hereby adopted for the period from 30 September 2002 to 31 December 2006.
2. The objectives and scientific and technological priorities for the specific programme are set out in Annex I.

*Article 2*

In accordance with Annex II to the framework programme, the amount deemed necessary for the execution of the specific programme shall be EUR 2 605 million, including a maximum of 6,0 % for the Commission's administrative expenditure. An indicative breakdown of this amount is given in Annex II to this Decision.

*Article 3*

All research activities carried out under the specific programme must be carried out in compliance with fundamental ethical principles.

*Article 4*

1. The detailed rules for financial participation by the Community in the specific programme shall be those referred to in Article 2(2) of the framework programme.

2. Instruments for implementing the specific programme are defined in Annexes I and III to the framework programme and described in Annex III to this Decision.
3. The rules for participation and dissemination shall apply to the specific programme.

*Article 5*

1. The Commission shall draw up a work programme for the implementation of the specific programme, setting out in greater detail the objectives and scientific and technological priorities set out in Annex I, and the timetable for implementation.
2. The work programme shall take account of relevant research activities carried out by the Member States, Associated States and European and international organisations. It shall be updated where appropriate.

*Article 6*

1. The Commission shall be responsible for the implementation of the specific programme.
2. The procedure laid down in Article 7(2) shall apply for the adoption of the following measures:
  - the drawing up and updating of the work programme referred to in Article 5(1), including the instruments to be used on a priority basis and any subsequent adjustment to their use as well as the content of the calls for proposals and the evaluation and selection criteria to be applied;
  - approval of funding of RTD actions where the estimated amount of the Community contribution under this programme is equal to or more than EUR 0,6 million;
  - the drawing-up of the terms of reference for the external assessment provided for in Article 6(2) of the framework programme;
  - any adjustment to the indicative breakdown of the amount as set out in Annex II.

*Article 7*

1. The Commission shall be assisted by a Committee.
2. Where reference is made to this paragraph, Articles 4 and 7 of Decision 1999/468/EC shall apply.

The period laid down in Article 4(3) of Decision 1999/468/EC shall be set at two months.

<sup>(1)</sup> OJ L 184, 17.7.1999, p. 23.

3. The Committee shall adopt its rules of procedure.

*Article 9*

*Article 8*

1. The Commission shall regularly report on the overall progress of the implementation of the specific programme, in accordance with Article 4 of the framework programme; information on financial aspects shall be included.

2. The Commission shall arrange for the independent monitoring and assessment provided for in Article 6 of the framework programme to be conducted concerning the activities carried out in the fields covered by the specific programme.

This Decision is addressed to the Member States.

Done at Brussels, 30 September 2002.

*For the Council*

*The President*

B. BENDTSEN

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## ANNEX I

**SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES AND BROAD OUTLINES OF THE ACTIVITIES****1. Introduction**

This programme will attack a number of key structural weaknesses that are manifested across all fields of European research and which are likely to have progressively more important effects on the EU's capacity to meet the aspirations of its citizens as its economies and societies become more knowledge-based. It will:

- enhance the propensity, at all levels, to turn research into useful and commercially valuable innovations;
- promote the development of human resources which constitute the underlying raw material on which research capabilities must be built, as well as the mobility of researchers — and of their knowledge and expertise — between European countries and to Europe from outside;
- stimulate the development and upgrading of research infrastructures of the highest quality on a more rational and cost-effective basis, and make facilities and associated resources more universally available to research workers throughout Europe who are able to benefit from them;
- develop the means for more constructive and effective communication and dialogue between research and citizens in general, so as to enable society at large to have a better-informed and more constructive influence on the future development and governance of science, technology and innovation <sup>(1)</sup>.

By their nature and means of implementation, the activities carried out within this programme are applicable to all fields of research and technology. They have specific vocations, distinct from, and complementary to, the activities implemented within other parts of the framework programme, notably those within the 'Integrating and strengthening the European Research Area' programme in the priority thematic areas defined for EU research in that programme, and attention will be given to ensure coherence with them.

This complementary relationship will be reflected in:

- improved provisions for human resource development and knowledge transfer arising from the implementation of the activities covered by this programme, which would apply, inter alia, to the thematic priority areas of research, as well as research infrastructures of broad application, including those crossing the boundaries between priority areas;
- the use, as appropriate, of consistent methods and tools to promote innovation through research and to reconcile better research with the concerns of society, as well as consistent frameworks for the implementation of actions on human resources, infrastructure support and ensuring the ethical conduct of research, which may be implemented, inter alia, within the context of integrated projects and networks of excellence.

Participation of the candidate countries in this programme will be encouraged.

During the implementation of this programme and in the research activities arising from it, fundamental ethical principles are to be respected. These include the principles reflected in the Charter of Fundamental Rights of the European Union, protection of human dignity and human life, protection of personal data and privacy, as well as animals and the environment in accordance with Community law and relevant international conventions and codes of conduct, e.g. the Helsinki Declaration in its latest version, the Convention of the Council of Europe on Human Rights and Biomedicine signed in Oviedo on 4 April 1997, and the Additional Protocol on the Prohibition of Cloning Human Beings signed in Paris on 12 January 1998, the UN Convention on the Rights of the Child, the Universal Declaration on the Human Genome and Human Rights adopted by UNESCO, and the relevant World Health Organisation (WHO) resolutions.

<sup>(1)</sup> With a view to facilitating such coherent implementation of the programme, for each meeting of the programme committee as defined in the agenda, the Commission will reimburse, in accordance with its established guidelines, the expenses of one representative per Member State, as well as of one expert/adviser per Member State for those agenda items where a Member State requires specific expertise.

Account will also be taken to the opinions of the European Group of Advisors on the Ethical Implications of Biotechnology (1991–1997) and the opinions of the European Group on Ethics in Science and New Technologies (as from 1998).

Participants in research projects must conform to current legislation and regulations in the countries where the research will be carried out. Where appropriate, participants in research projects must seek the approval of the relevant ethics committees prior to the start of the RTD activities. An ethical review will be implemented systematically for proposals dealing with sensitive issues. In specific cases, an ethical review may take place during the implementation of a project.

The following fields of research will not be financed under this programme:

- research activity aiming at human cloning for reproductive purposes;
- research activity intended to modify the genetic heritage of human beings which could make such changes heritable <sup>(1)</sup>;
- research activities intended to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.

In accordance with the Amsterdam protocol on animal protection and welfare, animal experiments must be replaced with alternatives wherever possible. Suffering by animals must be avoided or kept to a minimum. This particularly applies (pursuant to Directive 86/609/EEC) <sup>(2)</sup> to animal experiments involving species which are closest to human beings. Altering the genetic heritage of animals and cloning of animals may be considered only if the aims are ethically justified and the conditions are such that the animals' welfare is guaranteed and the principles of biodiversity are respected.

## 2. Research and innovation

### *Objectives*

The overall aim is to make a tangible improvement in Europe's innovation performance, in the short, medium and long term, by stimulating a better integration between research and innovation, and by working towards a more coherent and innovation-friendly policy and regulatory environment across the European Union.

To this end, and in accordance with the objectives of the Commission Communication 'Innovation in a knowledge-driven economy', activities will be implemented in a number of specific areas that are complementary and mutually supportive, within themselves and with the actions carried out under the heading 'Integrating and strengthening the European Research Area'. They will focus on improving the knowledge, understanding and capabilities of the actors involved — research workers, industrialists, investors, public authorities at European, national and regional levels, and others — by encouraging more intensive and fruitful interactions between them, and by providing strategic information and services, as well developing new methodologies and tools, to assist them in their particular endeavours. A general principle underlying all these actions is that innovation cannot be separated from research; the actions serve to reinforce the links between research and innovation, from the point of the conception of research activities, right through the period of their realisation.

To strengthen their structuring effect in Europe, these activities will, where appropriate, be carried out in cooperation with other forums or organisations at regional, national or European level, such as the European Investment Bank (EIB) and the European Investment Fund (EIF) in the context of the 'Innovation 2000 Initiative', as well as in coordination with Structural Funds measures in this field.

<sup>(1)</sup> Research relating to cancer treatment of the gonads may be financed.

<sup>(2)</sup> OJ L 358, 18.12.1986, p. 1.

## Activities envisaged

### (a) *Networking the players and users and encouraging interaction between them*

The effectiveness of innovation systems depends on the intensity of interactions and exchanges between the players concerned. The European networks involved in this activity will, among other things, have the aim of encouraging interfaces between research and industry and between business and funding. The activities will concern the encouragement and validation of local and regional initiatives to promote the creation and development of innovative businesses; the involvement of users in the innovation process; exchanges of good practice and the implementation of transnational cooperation involving universities, incubators, risk capital funds, etc.; and the optimisation of practices with regard to communication, training, transfer and sharing of knowledge between universities, businesses and the financial world.

### (b) *Encouraging transregional cooperation*

The regional level is the most appropriate for putting in place innovation strategies and programmes involving the main local players. The purpose of this activity, to be carried out in close cooperation with activities in the context of regional policy and the Structural Funds, will be:

- to promote exchanges of information on specific innovation-related themes;
- facilitate transfers of good practice and put in place innovation strategies in the regions in countries due to join the EU and
- encourage the carrying out at regional and trans-regional level of schemes or measures that have proved successful at European level.

### (c) *Experimenting with new tools and approaches*

The purpose of these activities is to experiment with new innovation concepts and methods addressing in particular critical points in the innovation process. These activities will concern:

- experimenting on a European scale with new concepts applied in a national or regional environment to promote innovation and the setting-up of innovative businesses;
- analysis of the potential for reproducing and/or exploiting proven methods, tools or results in new contexts and
- putting into place integrated platforms making it possible to input and disseminate knowledge and know-how concerning the socio-technical processes of innovation.

### (d) *Putting services in place and consolidating them*

The establishment of the European Research Area and the gradual integration of innovation systems in Europe will require a supply of information and services transcending the existing national fragmentation. The activities to be carried out will concern:

- the CORDIS research and innovation information service, which will be supplemented by other media in order to reach the various target populations;
- the network of innovation relay centres, the geographical coverage of which will continue to be extended, and which will be supplemented by instruments to encourage the transnational transfer of knowledge and technologies and
- information and support services in fields such as intellectual or industrial property and access to innovation funding.

### (e) *Stepping up economic and technological intelligence*

In the knowledge-based economy, economic and technological intelligence is a vital component of competitive research and innovation strategies. The activities to be carried out will centre on the innovation players: SMEs, researcher-entrepreneurs and investors. They will mainly involve intermediaries working with/for these players as well as organisations with economic and technological intelligence expertise. They will concentrate on specific scientific and technological themes or industrial sectors and may concern:

- innovation promotion in SMEs, in particular by means of activities aimed at facilitating their participation in the Community research programmes;
- support for activities concerning the gathering, analysis and dissemination of information on scientific and technological developments, applications and markets which may be of assistance to the stakeholders and
- identification and dissemination of best practice with regard to economic and technological intelligence.

(f) *Analysing and evaluating innovation in Community research projects*

The research and innovation activities carried out in the context of Community projects, in particular within the networks of excellence and the integrated projects, represent a plentiful source of information about obstacles to innovation and the practices to be deployed in order to overcome them. The ex-post analysis of these practices will concern:

- the gathering and analysis of information on measures taken to promote innovation in Community projects, as well as the obstacles encountered and the actions needed to remove them;
- the comparison of experience derived from Community projects with the lessons learnt from other national or intergovernmental programmes and the validation of the information obtained and
- the active dissemination of this information among businesses and other participants in the generation and exploitation of knowledge.

### 3. **Human Resources and Mobility**

Today's knowledge-based societies are heavily dependent on their capacity to produce, transfer and utilise knowledge. This requires mobilising cognitive resources, beginning with the research community. The overall strategic objective of the Human Resources and Mobility activity is to provide broad support for the development of abundant and dynamic world-class human resources in the European research system, taking into account the inherent international dimension of research.

The mobility of research workers will be promoted with a view to the successful creation of the European Research area. This will involve a coherent set of actions, largely based on the financing of structured mobility schemes for researchers. These will essentially be geared to the development and transfer of research competencies, the consolidation and widening of researchers' career prospects and the promotion of excellence in European research. The widely recognised Marie Curie name will apply to all the actions concerned.

The activity will be open to all fields of scientific and technological research that contribute to the Community's RTD objectives. However, in order to respond to the evolution of Europe's requirements in this area, the possibility of refining priorities, as regards for example, scientific disciplines, participating regions, types of research organisations, and potential of the targeted researcher populations, especially women and younger researchers will be retained, and will take into account measures taken towards creating synergies in the area of higher education in Europe.

Attention will be paid to:

- the participation of women within all actions, and appropriate measures to promote a more equitable balance between men and women in research;
- the personal circumstances relating to mobility, particularly with respect to the family, career development and languages; and
- the development of research activity in the less-favoured regions of the EU and Associated Candidate Countries, and to the need for increased and more effective cooperation between research disciplines and between academia and industry, including SMEs.



With a view to further reinforcing the human potential for European research, this activity will also aim to attract the best and most promising researchers from third countries<sup>(1)</sup>, promote the training of European researchers abroad and stimulate the return of European scientists established outside Europe.

#### Actions to be pursued

Four main strands of actions will be implemented.

##### (a) *Host-driven actions*

This first strand is aimed at supporting research networks, research organisations and enterprises (including in particular SMEs), in the provision of structured global schemes for the transnational training and mobility of researchers, and the development and transfer of competencies in research including those relating to research management and research ethics. The actions concerned are intended to have a strong structuring effect on the European research system, in particular by encouraging junior researchers to pursue a research career.

Training elements in this strand will be directed at researchers at the early stages (typically the first 4 years) of their research careers, such as those who are undertaking a doctoral degree, while the transfer of competencies and knowledge will involve more experienced research workers. These actions are also intended to encourage mobility between different sectors.

- Marie Curie Research Training Networks — These provide the means for research teams of recognised international stature to link up, in the context of a well-defined collaborative research project, in order to formulate and implement a structured training programme for research workers in a particular field of research. Networks will provide a cohesive, but flexible framework for the training and professional development of research workers, especially in the early stages of their research career. Networks also aim to achieve a critical mass of qualified research workers, especially in areas that are highly-specialised and/or fragmented; and to contribute to overcoming institutional and disciplinary boundaries, notably through the promotion of multidisciplinary research. They will also provide a straightforward and effective means to involve the less-favoured regions of the EU and Associated Candidate Countries in internationally-recognised European research cooperation. Partners will be given significant autonomy and flexibility in the detailed operation of the networks. The duration of a network will typically be 4 years, with associated fellowships of up to 3 years, including short-term stays.
- Marie Curie Host Fellowships for Early Stage Research Training — These will be targeted at higher education and research institutions, training centres and enterprises, with a view to reinforcing their training capability. The scheme will be directed at research workers in the early stages of their professional career. It will focus on the acquisition of specific scientific and technological competencies in research, as well as of complementary skills. Hosts will be selected on the basis of their area of specialisation in research training. The associated fellowships will allow for fellows' stays for up to a maximum duration of 3 years. The scheme will also work towards more co-ordinated approaches to training among the organisations concerned, particularly between those involved in international doctoral studies.
- Marie Curie Host Fellowships for the Transfer of Knowledge — These will be directed at European organisations (universities, research centres, enterprises, etc.) in need of developing new areas of competence, as well as at furthering the development of research capabilities in the less-favoured regions of the EU and in the Associated Candidate Countries. Knowledge transfer fellowships will allow experienced researchers to be hosted at such organisations for the transfer of knowledge, research competencies and technology. Fellowships will have a maximum duration of 2 years.

<sup>(1)</sup> Participation and funding of researchers from third countries is foreseen in all of the host-driven mobility schemes (section a), as well as in one of the individual-driven schemes (section b). In such cases, account will be taken of any relevant arrangements between the Community and those countries — or groups of countries, as well as of the relevant Framework Programme participation and financing rules.



- Marie Curie Conferences and Training Courses — These will enable junior research workers to benefit from the experience of leading research workers. Support will be given to specific training activities (including virtual ones) that highlight particular European achievements and interests. Two categories of measures are foreseen: the first concerns support for a coherent series of high-level conferences and/or training courses (summer schools, laboratory courses etc.) proposed by a single organiser, and covering one or several specific themes; the second involves support for the participation of junior researchers in large conferences selected for their specific training interest. Such activities would typically be for a few days, but could extend to a few weeks, for example in the case of summer schools.

(b) *Individual-driven actions*

This second strand of actions concerns the support to individual research workers, in response to their particular needs with a view to complement individual competencies in particular in terms of multidisciplinary and research management, in the process of reaching a position of professional maturity and independence. It also addresses the linkages between European and third countries' research workers. It involves a number of schemes organised according to the geographical origin and destination of the research workers. Participation in these schemes will be open to researchers with at least 4 years of research experience, or those in possession of a doctorate degree.

- Marie Curie Intra-European Fellowships — these will allow the most promising research workers from EU and Associated Countries to undertake training through research in the European organisations most appropriate to their individual needs. The application will be made by the fellow in conjunction with the host organisation. The topic will be freely chosen by the research workers in collaboration with the host, with a view to completing or diversifying his/her expertise. These fellowships will have a duration of 1 to 2 years.
- Marie Curie Outgoing International Fellowships — these will be awarded to research workers from EU and Associated Countries to work in established third country research centres, thereby widening their international experience in research. This scheme will require the submission of a coherent individual training programme, involving a first phase abroad, followed by a mandatory second phase in Europe. This support should allow for a sufficiently long training period.
- Marie Curie Incoming International Fellowships — These will aim at attracting top-class research workers from third countries to work and undertake research training in Europe, with the view to developing mutually-beneficial research cooperation between Europe and third countries. In the case of emerging and transition economies and developing countries, the scheme may include provision to assist fellows to return to their country of origin.

(c) *Excellence Promotion and Recognition*

This third strand of actions will focus on the promotion and recognition of excellence in European research, thereby increasing its visibility and attractiveness. It will aim at promoting European research teams, especially in new and/or emerging areas of research, and at highlighting personal achievements of European research workers, with a view to supporting their further development and international recognition, while also promoting the diffusion of their work for the benefit of the scientific community.

- Marie Curie Excellence Grants — These aim at providing support for the creation and development of European research teams which are considered to have the potential to reach a high level of excellence, more particularly for leading edge or interdisciplinary research activities. The grant will cover a period of up to 4 years and will be awarded on the basis of a well defined research programme.
- Marie Curie Excellence Awards — These are scientific prizes to give public recognition to excellence achieved by research workers who have in the past benefited from training and mobility support by the Community. Beneficiaries may propose themselves or be proposed by others.
- Marie Curie Chairs — These will be awarded for the purpose of making top-level appointments, in particular to attract world-class research workers and encourage them to resume their careers in Europe. Awards will normally have a duration of three years. This scheme may be developed in synergy with the host-driven actions.

(d) *Return and Reintegration Mechanisms*

A further mechanism Marie Curie Return and Reintegration Grants will be directed at researchers from the EU and Associated Countries who have just completed a Marie Curie fellowship of at least two years. It will consist of a lump sum, in the form of a grant to be used within one year following the term of the Marie Curie action. It will be allocated to the fellows on the basis of a defined project, which will be evaluated on its own merits. The mechanism will assist the professional reintegration of the research worker, the priority being given to reintegration in his or her country or region of origin.

A similar mechanism, but covering a longer period, up to two years, will apply to European research workers who have carried out research outside Europe for at least 5 years, with or without having benefited from a Marie Curie action, and who wish to return to Europe.

#### Cooperation with Member States and Associated Countries

The Human Resources and Mobility activity will seek to cofinance initiatives which foster cooperation and create synergies with and within programmes at national and regional level where these coincide with the specific objectives of the schemes outlined above. Such cooperation will be established on the basis of relevant Community criteria, with a view to creating genuine access to these initiatives for all EU and Associated Country researchers, playing a complementary role regarding programmes at national and regional level, notably by opening up access to these programmes for non-national research workers, as well as promoting cross-boarder training of research workers, and by promoting the adoption of mutually-recognised research training standards.

Initiatives will be undertaken to reinforce cooperation with Member States and Associated Countries in the provision of 'proximity support' to research workers, which is a key element of any mobility scheme for research workers moving within or returning to Europe. In particular, this could be undertaken through the support to the networking of existing and new structures, at national or regional level, with the aim of providing practical assistance to foreign research workers in matters (legal, administrative, familial or cultural) relating to their mobility.

A further aspect of this cooperation might concern a number of tasks associated with the management of the activity, beyond the increased importance of host-driven actions. In that context, envisaging alternative ways of management and follow up of individual fellowship contracts would require prior establishment of a clear demarcation of tasks and responsibilities in accordance with Community financial regulations and rules, and the undertaking of relevant cost/benefit analyses. A mechanism will be set up to monitor and optimise research workers' mobility and the return of European research workers who have temporarily emigrated from Europe. The same mechanism will also serve to monitor the mobility of research workers from the applicant countries with a view to the enlargement of the European Union.

#### Internal, Framework Programme Cooperation

The role of the Human Resources and Mobility activity is to support research training and the development of research competencies. It plays this role in parallel to the activities undertaken in the context of the thematic priorities. This does not preclude other activities within the Framework Programme from incorporating similar elements. The Human Resources and Mobility activity will provide assistance with regard to the adoption of consistent criteria in relation to the evaluation, selection and monitoring of such actions, as well as the promotion of common approaches among the activities, with a view to ensuring coherence and developing possible synergies, and an equitable balance in the participation of men and women.

#### 4. **Research infrastructures**

The ability of Europe's research teams to remain at the forefront of all fields of science and technology depends on their being supported by state-of-the-art infrastructures. The term 'research infrastructures' refers to facilities and resources that provide essential services to the research community in both academic and/or industrial domains. Research infrastructures may be 'single-sited' (single resource at a single location), 'distributed' (a network of distributed resources, including infrastructures based on Grid-type architectures), or 'virtual' (the service being provided electronically).

The overall objective of this activity is to promote the development of a fabric of research infrastructures of the highest quality and performance in Europe, and their optimum use on a European scale based on the needs expressed by the research community. Specifically this will aim at:

- ensuring that European research workers may have access to the infrastructures they require to conduct their research, irrespective of the location of the infrastructure;
- providing support for a European approach for the development of new research infrastructures, also at the regional and transregional level, and for the operation and enhancement of existing infrastructures, including where appropriate facilities of world-wide relevance not existing in Europe.

Where relevant, support for research infrastructures in this programme will be implemented in association with the thematic priorities of the Framework Programme and with the other available forms of support.

Five schemes for support will be implemented:

- **Transnational Access.** The objective is to sponsor new opportunities for research teams (including individual researchers) to obtain access to individual major research infrastructures most appropriate for their work. Community financing will cover the necessary operating costs of providing access to such infrastructures for research teams working in Member States and Associated countries other than the state where the operator of a given infrastructure is located.
- **Integrating Activities.** The objective is to support the provision of essential services to the research community at European level. This may cover, in addition to transnational access, the establishment and operation of cooperation networks, and the execution of joint research projects, raising the level of the performance of the infrastructures concerned. The scheme will also encourage the bridging of gaps that may limit the potential for exploitation of research results by industry, including SME's. Integrating activities will be selected on the basis of a wide-scale but flexible scientific and technological programme of European dimension aiming, where appropriate, at the long-term sustainability of the programme. This scheme may be implemented through Integrated Infrastructure Initiatives and Coordination Actions.
- **Communication Network Development.** The objective of this scheme in support of existing research infrastructures is to create, in conjunction with the priority thematic research area on Information Society Technologies, a denser network between related initiatives, in particular by establishing a high-capacity and high-speed communications network for all research workers in Europe (GEANT) and specific high performance Grids and test-beds (GRIDs), as well as electronic publishing services.
- **Design studies.** The objective is to contribute, on a case-by-case basis, to feasibility studies and technical preparatory work undertaken in one or a number of Member States or Associated countries for those new infrastructures which have a clear European dimension and interest, taking into account the needs of all potential users and systematically exploring the possibilities of contributions from other sources, including the EIB or the Structural Funds for the funding of these infrastructures.
- **Development of new infrastructures** Optimising of European infrastructures by providing limited support for the development of a restricted number of projects for new infrastructures in duly justified cases where such support could have a critical catalysing effect in terms of European added value. This support, taking due account of Member States' opinion, may supplement contributions from the EIB or the Structural Funds to the funding of these infrastructures.

In general, funding provided for new or enhanced infrastructures will be limited to the minimum necessary to catalyse the activity with the major part of construction and operation, and the long-term sustainability of the infrastructures in question, being assured by national and/or other sources of finance. Such funding would only be provided on the basis of a detailed justification, based on European added value, addressing the scientific, legal and financial dimensions of the proposed development. Broadband communication networks, which are highly relevant to the political goals set out by the European Research Area and the e-Europe initiative, should also be used as a means to enhance scientific cooperation with third countries.

Support for research infrastructures in this programme should, where relevant, take into account existing or future mechanisms for a European approach to research infrastructures in Europe (e.g. National Research and Education Networks — NRENS and European Strategy Forum for Research Infrastructures), as well as the scientific advice of existing European and international organisations (e.g. European Science Foundation — ESF). Accompanying measures under this programme may be implemented, where appropriate, to sustain these mechanisms.

## 5. Science and society

Today, and even more in the knowledge-based society of tomorrow, science and technology have a ubiquitous presence throughout the economy and in everyday life. If they are to realise their full potential in securing a continually increasing quality of life — in the broadest sense — for Europe's citizens, new relations and a more productive dialogue between the scientific community, industrialists, policy-makers and society at large, as well as scientists' critical thinking and responsiveness to societal concerns, will be needed.

Such a dialogue cannot be confined to the EU alone. It must be international in scope, taking full account of the enlargement perspective and the global context. Given the very broad range of issues and interactions that are implied in the relations between science and technology, on one hand, and the broader community, on the other, these considerations must be integrated within all areas of activity of the framework programme. The role of this specific activity is to develop the structural links between the institutions and activities concerned and provide a central focus, through common reference frameworks and the development of appropriate tools and approaches, to guide activities in this domain covered by the different parts of the framework programme.

It will be implemented by means of networks, benchmarking, exchange of best practices, developing and promoting awareness of methodologies, studies and the bringing together of national efforts. Appropriate synergies should also be created in relation to the implementation of Science and Society Action Plan. In specific cases, where appropriate, dedicated research will be supported.

### (a) *Bringing research closer to society*

The aim is to examine systematically the various components of 'science and governance' in order to create conditions under which policy decisions are more effective in meeting society's needs, more soundly based in science and at the same time take account of the concerns of civil society. This requires:

- consideration of effective processes of dialogue on emerging scientific and technological issues ultimately having consequences for prospective policy development;
- developing appropriate means for creating scientific references and channelling scientific advice to policymakers and
- equipping policy makers with tools to assess and manage scientific uncertainty, risk and precaution.
- Science and governance: analysing and support to best practice; developing new consultation mechanisms (such as citizens' fora) to promote more productive involvement of civil society and relevant stakeholders in policy formulation and implementation, including the communication of scientific outputs necessary to decision taking in terms readily understandable to civil society and other stakeholders; monitoring activities concerning the functioning of policy-making processes to assess the interaction between experts, industry, civil society and policy makers.
- Scientific advice and reference systems: exchange of experience and good practice; monitoring the production of scientific advice world-wide and how this advice is provided as input to decision; developing new and better methodologies for reliable and recognised reference systems; ensuring the smooth operation and effective use of, inter alia, the European Research Advisory Board and its sub-committees in order to provide scientific advice for the development of the European Research Area.

(b) *Responsible research and application of science and technology*

The aim is to ensure that rapidly advancing progress in science is in harmony with fundamental ethical principles. Activities will promote 'responsible research' in Europe, in which the requirements for investigative freedom are better reconciled with social and environmental responsibilities in the development and application of science and technology, as well as the public dialogue, monitoring, and early warning, of ethical and social issues, and risks arising from new technological developments, for the benefit of national and international policy makers and other interested groups.

- Ethics: networking between existing ethics bodies and activities in Europe, and promoting dialogue on ethics in research with other regions in the global context; awareness-raising and training activities in ethics; coordination and development of codes of conduct for research activities and technological developments; research on ethics in relation to science, technology developments and their applications, for example, in relation to information society, nanotechnologies, human genetics and biomedical research and in food technologies.
- Uncertainty, risk and implementing the precautionary principle: analysis and support to best practice in the application of the precautionary principle in different areas of policy making and in the assessment, management and communication of uncertainty and risk.

(c) *Stepping up the science/society dialogue and women in science*

Support for the responsible development of science and technology requires not only a continued dialogue between the relevant stakeholder, but also better public awareness of scientific and technological advances and their possible implications, and a wider understanding of scientific and innovation culture. There are also particular needs to stimulate young people's interest in science, to increase the attractiveness of scientific careers and to make progress towards gender equality in research, which will also enhance human resources and improve levels of excellence in European research.

- Public understanding and confidence: supporting awareness-raising events and the recognition of achievements in European research; analysis of the factors influencing public opinion, including the role of the media and science communicators; developing new ways of raising public awareness and knowledge; encourage comprehensive 'stakeholder' debates, involving all relevant stakeholders, and stimulate awareness for innovation in society.
  - Young people's interest in scientific careers: initiatives to attract the younger generation to participate in the discussion on science and technology and their societal impact and to raise the scientific and technological awareness among youth (for instance, through practical training for students and cooperation with schools); support for the development of better approaches to science for girls and boys within and outside the formal education system and for actions concerning a better understanding of the relative attractiveness and social aspects of taking science as a career.
  - Women and Science: actions to stimulate the policy debate at national and regional level to mobilise woman scientists and boost the participation of the private sector; promoting the enhancement of the Gender Watch System and associated activities to promote gender equality throughout the framework programme; specific actions to develop a better understanding of the gender issue in science.
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## ANNEX II

**INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY FOR THE EXECUTION OF THE SPECIFIC PROGRAMME**

Types of activities	Amount (EUR million)
Research and Innovation	290
Human Resources	1 580
Research infrastructures	655 <sup>(1)</sup>
Science and society	80
<b>Total</b>	<b>2 605</b>

<sup>(1)</sup> Including up to EUR 200 million for the further development of GEANT and GRID.

## ANNEX III

**MEANS FOR IMPLEMENTING THE PROGRAMME**

In order to implement the specific programme, and in accordance with Decision No 1513/2002/EC and the rules for participation and dissemination, the Commission may use, across the whole field of science and technology:

- Specific targeted innovation projects implemented in the area of 'Research and innovation'. They are designed to test, validate and disseminate new innovation concepts and methods at the European level.
- Specific targeted research projects implemented in the area of 'Science and society'. They will be sharply focussed and will take either of the following two forms, where relevant for this theme, or a combination of the two:
  - (a) a research and technological development project designed to gain new knowledge either to improve considerably or to develop new products, processes or services or to meet other needs of society and Community policies;
  - (b) a demonstration project designed to prove the viability of new technologies offering potential economic advantage but which cannot be commercialised directly.
- Integrated infrastructure initiatives implemented in the area of 'Research infrastructure'. They will combine in a single action several activities essential to reinforce and develop research infrastructures, in order to provide services at the European level. To this end, they will combine networking activities with a support activity (such as relating to transnational access) or research activities needed to improve infrastructure performance, excluding, however, the financing of investment for new infrastructures, which can only be financed as specific support actions. They will include a component of dissemination of knowledge to potential users, including industry and in particular to SMEs.
- Actions to promote and develop human resources and mobility implemented in the area of 'Human resources and mobility'. They will be targeted at training, development of expertise or transfer of knowledge. They will involve support for actions carried out by natural persons, host structures, including training networks, and also by European research teams.
- Coordination actions implemented in all the areas of the programme. They are intended to promote and support the coordinated initiatives of a range of research and innovation operators aiming at improved integration. They will cover activities such as the organisation of conferences, meetings, the performance of studies, exchanges of personnel, the exchange and dissemination of good practices, setting up information systems and expert groups, and may, if necessary, include support for the definition, organisation and management of joint or common initiatives.
- Specific support actions implemented in all the areas of the programme. They will complement the implementation of the Framework Programme and may be used to help in preparations for future Community research and technological development policy activities including monitoring and assessment activities. In particular, they will involve conferences, seminars, studies and analyses, high level scientific awards and competitions, working groups and expert groups, operational support and dissemination, information and communication activities, or a combination of these, as appropriate in each case. They may also include actions in support of research infrastructure relating to, for instance, transnational access or preparatory technical work (including feasibility studies) and the development of new infrastructure.

The Commission will evaluate the proposals in accordance with the evaluation criteria set out in the abovementioned legal instruments.



The Community contribution will be granted in accordance with the abovementioned legal instruments and in compliance with the Community framework for state aid for research. In certain cases when a project receives the maximum level of co-financing authorised under the framework programme or an overall grant, an additional contribution from the Structural Funds could be granted pursuant to Council Regulation (EC) No 1260/99 of 21 June 1999 laying down general provisions on the Structural Funds. <sup>(1)</sup>

Where entities from the Candidate Countries participate, an additional contribution from the pre-accession financial instruments could be granted under similar conditions. Where organisations from Mediterranean or developing countries participate, a contribution of the MEDA programme and of the financial instruments of the Community's aid to development could be envisaged.

Actions under Articles 169 and 171 of the Treaty which contribute to the scientific and technological objectives set out in Annex I to this Decision may be supported financially by the specific programme, in accordance with the relevant decisions under Article 172 of the Treaty. In carrying out the programme, the Commission may have recourse to technical assistance.

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<sup>(1)</sup> OJ L 161, 26.6.1999, p. 1.