



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 10.06.1998
COM(1998) 305 final

VOL. II

98/0181 (CNS)
98/0182 (CNS)
98/0183 (CNS)
98/0184 (CNS)

PROPOSALS FOR COUNCIL DECISIONS
CONCERNING THE SPECIFIC PROGRAMMES IMPLEMENTING
THE FIFTH FRAMEWORK PROGRAMME OF THE
EUROPEAN COMMUNITY FOR RESEARCH, TECHNOLOGICAL
DEVELOPMENT AND DEMONSTRATION ACTIVITIES
(1998 to 2002)

(presented by the Commission)

Proposal for a
COUNCIL DECISION
adopting a specific programme for research,
technological development and demonstration
on "Confirming the international role of Community research"
(1998 to 2002)

**PROPOSAL FOR A COUNCIL DECISION
adopting a specific programme for research,
technological development and demonstration on "Confirming the international
role of Community research" (1998 to 2002)**

0181 (CNS)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 130i(4) thereof,

Having regard to the proposal from the Commission,¹

Having regard to the opinion of the European Parliament,²

Having regard to the opinion of the Economic and Social Committee,³

Whereas by Decision No .../EC,⁴ the European Parliament and the Council adopted the fifth framework programme of the European Community (hereinafter referred to as the fifth framework programme) for research, technological development and demonstration (hereinafter referred to as RTD) activities for the period 1998 to 2002 specifying *inter alia* the activities to be carried out in the field of the international role of Community research;

Whereas Article 130i(3) of the Treaty stipulates that the framework programme shall be implemented through specific programmes developed within each activity under the framework programme, and that each specific programme shall define the detailed rules for implementing it, fix its duration and provide for the means deemed necessary;

Whereas, in accordance with Article 4(2) of Decision No 1110/94/EC of the European Parliament and of the Council of 26 April 1994 concerning the fourth framework programme of the European Community activities in the field of research, technological development and demonstration (1994 to 1998)⁵ and Article 4(2) of the Council Decisions on the specific programmes implementing the fourth framework programme, the Commission has had an external assessment conducted which it has transmitted to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions together with its conclusions and comments;

¹ OJ No , p.

² OJ No , p.

³ OJ No , p.

⁴ OJ No , p.

⁵ OJ No L 126, 18.5.1994, p. 1. Decision last amended by Decision No 2535/97/EC (OJ L 347, 18.12.1997, p. 1).

Whereas the Scientific and Technical Research Committee has been consulted on the scientific and technological content of the specific programmes, as set out in the working paper adopted by the Commission on 5 November 1997;⁶

Whereas, in accordance with Article 130j of the Treaty, Council Decision .../.../EC of ... concerning the rules for the participation of undertakings, research centres and universities and for the dissemination of research results⁷ (hereinafter referred to as the rules for participation and dissemination) applies to this specific programme and allows the participation of the Joint Research Centre in the indirect actions covered by this specific programme;

Whereas, for the purpose of implementing this programme, in addition to cooperation covered by the Agreement on the European Economic Area or by an association agreement, it may be appropriate to engage in international cooperation activities, on the basis of notably Article 130m of the Treaty, with third countries or international organisations;

Whereas implementation of this programme will also comprise activities and mechanisms aimed at stimulating, disseminating and exploiting RTD results, in particular vis-à-vis small and medium-sized enterprises, and activities to stimulate the mobility and training of researchers;

Whereas, in accordance with the objectives of the first action plan for innovation, research activities under the fifth framework programme should be geared more towards innovation;

Whereas the implementation of this programme should be monitored with a view to adapting it, where appropriate, to scientific and technological developments; whereas in due course there should also be an assessment of progress with the programme by independent experts,

⁶ COM(97) 553 final, 5.11.1997.

⁷ OJ No ..

HAS ADOPTED THIS DECISION*Article 1*

In accordance with Article 3(1) of the fifth framework programme, the specific programme on "Confirming the international role of Community research" (hereinafter referred to as the specific programme) is hereby adopted for the period from [the date of adoption of this programme] to 31 December 2002.

Article 2

1. In accordance with Annex III to the fifth framework programme, the amount deemed necessary for carrying out the specific programme (hereinafter referred to as the amount) is ECU 491 million, including a maximum of 9,50% for the Commission's administrative expenditure.
2. Of this amount
 - ECU 70 million is for the period 1998 to 1999, and
 - ECU 421 million is for the period 2000 to 2002.

Where appropriate, the latter figure will be adapted in accordance with Article 3(3) of the fifth framework programme.

3. The budgetary authority shall, in compliance with the scientific and technological objectives and priorities laid down in this Decision, set the appropriations for each financial year taking into account the availability of resources within the multiannual financial perspective.

Article 3

1. The general outlines, the scientific and technological objectives and the priorities for the specific programme are set out in Annex I. They are consistent with the fundamental principles and the three categories of selection criteria indicated in Annex I to the fifth framework programme.
2. In accordance with these principles and criteria the selection criteria indicated in Article 10 of the rules for participation and dissemination shall be applied for the selection of the RTD activities to be carried out.

All these criteria shall be complied with in the implementation of the programme, including the work programme referred to in Article 5(1), although they may be weighted differently.

3. The rules for participation and dissemination shall apply to the specific programme.
4. Detailed rules for financial participation by the Community in the specific programme are defined in Article 4 of the fifth framework programme.
5. The indirect RTD actions under the specific programme are defined in Annexes II and IV to the fifth framework programme.

Specific rules for implementing the programme are set out in Annex II.

Article 4

In the light of the criteria set out in Article 3, and the scientific and technological objectives and priorities set out in Annex I, the Commission shall:

- (a) monitor the implementation of the specific programme and, where appropriate, submit proposals for adapting it, in accordance with Article 5(1) of the fifth framework programme,
- (b) have the external assessment provided for in Article 5(2) of the fifth framework programme conducted concerning the activities carried out in the fields covered by the specific programme.

Article 5

1. The Commission shall draw up a work programme specifying:
 - (a) the content of Annex I,
 - (b) the indicative timetable for the implementation of the specific programme,
 - (c) the coordination arrangements set out in Annex II,
 - (d) and, where necessary, the selection criteria and the arrangements for applying them for each type of indirect RTD action.

The work programme shall be updated where appropriate.

- 2. For the purpose of implementing the indirect RTD actions, the Commission shall, on the basis of the work programme, initiate the procedures set out in the rules for participation and dissemination, primarily through calls for proposals.

Article 6

- 1. The Commission shall be responsible for the implementation of this specific programme.
- 2. It shall be assisted by a Programme Committee composed of representatives of the Member States and chaired by the representative of the Commission.
- 3. The representative of the Commission shall submit to the Programme Committee a draft of the measures to be taken concerning:
 - the drawing-up and updating of the work programme referred to in Article 5(1),
 - the drawing-up of the terms of reference for the external assessment provided for in Article 5(2) of the fifth framework programme.

Article 7

- 1. The Programme Committee shall deliver its opinion on the draft measures referred to in Article 6(3) within a time limit which the Chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148(2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the Committee shall be weighted in the manner set out in that Article. The Chairman shall not vote.

The Commission shall adopt the measures envisaged if they are in accordance with the opinion of the Committee.

If the measures envisaged are not in accordance with the opinion of the Committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a proposal relating to the measures to be taken. The Council shall act by a qualified majority.

If, on expiry of a period of six weeks from the referral of the matter to the Council, the Council has not acted, the proposed measures shall be adopted by the Commission.

- 2. The Commission shall regularly inform the Programme Committee of progress with the implementation of the specific programme, and shall in particular provide it with information about the results of the evaluation and selection of the indirect RTD actions.

Article 8

This Decision is addressed to the Member States.

Done at Brussels,

For the Council

The President

ANNEX I

THE GENERAL OUTLINES, THE SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES AND THE PRIORITIES

INTRODUCTION

The main objectives of this horizontal theme are to promote S/T cooperation internationally; to reinforce Community capacities in the fields of science and technology; to generally support the achievement of scientific excellence within the wider international framework; and to contribute to the implementation of the Community's external policy also with the accession of new members in mind.

Strategic objectives and approach of the programme

- to promote scientific and technological cooperation between undertakings, organisations and researchers from third countries and from the Community, likely to produce significant, mutual and balanced benefits, taking into account the different needs and circumstances of individual groups of countries and regions whilst respecting the protection of intellectual property;
- to facilitate access for research centres and undertakings established in the Community to scientific and technological knowledge available outside the Community and useful to the Community's interests;
- to enhance the position and role of Community research in the international scientific and technological arena and to promote a European scientific and technological culture;
- to prepare for the accession of new Member States, e.g. by encouraging their full association with the framework programme; to contribute to the stabilisation of the RTD potential of the CEECs in general and of the Newly Independent States of the former Soviet Union (NIS), to support and develop the Euro-Mediterranean partnership and to contribute to the sustainable economic, social and scientific development of developing countries;
- to help European research players acquire information and gain experience of research capacity, activity and priorities of industrialised third countries and "emerging economy" countries, so as to make Community industry more competitive and enhance its presence on new markets.

International RTD cooperation will be pursued in two forms in the fifth framework programme: firstly, through this "international cooperation" programme and secondly, through the other specific programmes.

- The specific actions provided for in this programme are as follows:
 - To pursue strategically defined activities aimed at the accession candidate countries, other Central and Eastern European countries (CEECs), the New Independent States of the former Soviet Union (NIS), the Mediterranean partner countries and developing countries. In order to exploit fully the opportunities for cooperation and optimise the added value at European level, this programme will also facilitate cooperation with certain industrialised and emerging economy countries.
 - To increase the opportunities for training of researchers.
 - To ensure coordination with other programmes of the framework programme, with other Community initiatives and policies, in particular external policies, as well as with policies and programmes of Member States, international organisations and cooperation schemes such as COST and EUREKA.
- The second form of international cooperation to be pursued will be the participation of partners from outside the Union (without funding from the international cooperation programme) in projects of the other programmes in accordance with the participation and dissemination rules.

1 SPECIFIC ACTIVITIES IN THE PROGRAMME

This programme will finance only specific RTD activities which are relevant to certain third countries or regions and which are not addressed by the other parts of the framework programme. Research priorities will be identified through a strengthened dialogue with the regions concerned, taking into account the diversity of their economic and socio-cultural situations. Support will focus on research and technological development cooperation rather than on technical assistance or technology transfer which can be better achieved through Community external relations programmes. In the implementation of this programme, the concerns of industry and in particular of small and medium-sized enterprises will be taken into account.

A. COOPERATION WITH CERTAIN CATEGORIES OF THIRD COUNTRIES

A.1 States in the pre-accession phase*

Rationale and objectives

The period covered by the fifth framework programme will coincide with the preparation for membership of the European Union by the accession candidate countries. In the context of *Agenda 2000*, the objective of this programme is thus to help accelerate the reform in their science structures, while safeguarding the highly qualified human resources and building up the fundamental scientific infrastructure. This will be pursued by encouraging these countries to become associated to the specific programmes and to participate in projects under similar conditions to Member States. In view of the reinforced pre-accession strategy proposed under *Agenda 2000*, this association to the framework programme could be facilitated by a reduced, but progressively increasing, financial contribution required from these countries and by PHARE in the framework of the Accession Partnerships.

Activities

- Specific activities will be undertaken to promote existing *centres of excellence* in CEECs in order to put their research capabilities at the service of the economic and social needs of their region and of the Union as a whole. The centres to be supported should bring together theoretical and applied research, including research in the natural, social and economic sciences, where possible using a multi-disciplinary approach. They should link local expertise and international excellence and should also serve young researchers as training centres. Support will be provided for schemes consisting of measures such as networking, conference and workshop organisation and visiting scientists. This will enable cooperation with western scientists *in situ*, and the establishment of programmes and events to highlight the "supra-regional" relevance of the centres, thus strengthening their attraction for neighbouring countries.
- In addition, *accompanying measures* will be developed to strengthen the participation of these countries in other programmes of the framework programme (e.g.

* The ten countries of Central and Eastern Europe plus Cyprus, which is not eligible for PHARE.

dissemination of information on opportunities offered by the framework programme), making use also of cooperation networks.

A.2 NIS and CEECs not in the pre-accession phase

Rationale and objectives

Closer relationships between these countries and the Union in science and technology will help maintain and stimulate their economic development. A number of these countries have made substantial efforts to consolidate the existing scientific potential and to provide new administrative structures more suitable to research needs. The Union's objectives in scientific cooperation with these countries are to support efforts to develop a pluralistic scientific and technological system (including the fundamental scientific infrastructure) and to preserve and develop their research excellence by building on existing expertise in order to help them solve some of their major economic and societal problems.

Activities

This programme will undertake joint research projects and concerted actions in areas not covered by the other specific programmes :

- *Structural problems of transition at regional level* will be identified. These will include in particular problems linked to environment and health such as: desertification, rehabilitation of land-locked sea areas and large lakes, consequences of past approaches to energy production and use, Arctic environment management, exposure of humans to environmental agents, air pollution and water quality, prevention and control of re-emerging diseases, reform of the health services system.
- The *research potential in these countries* should be consolidated and its interactions with the European scientific community promoted, in fields where they have a recognised excellence and valuable cooperation potential: e.g. physics, mathematics, biology, chemistry, geo-sciences, agri-sciences, biomedicine, material, laser and information society technologies, aero-space technologies, transport and humanities. This will be achieved by building on the experience already gained through previous cooperation, such as COPERNICUS, COST, EUREKA, PHARE and TACIS (notably

the ISTC and STCU), as well as through INTAS, provided that a new agreement is reached between its members on its continuation.

A.3 Mediterranean partner countries

Rationale and objectives

In addition to their participation in the other specific programmes and in the specific action for Research for Development of this programme, certain specific actions will be undertaken with the Mediterranean partner countries in order to strengthen the research and technology dimension of the Euro-Mediterranean partnership, improving where appropriate their research and technological development capabilities and promoting innovation.

Activities

Subject to dialogue with these countries, specific activities will be undertaken concerning regional aspects of some of the following areas: integrated coastal zone management in the Mediterranean (including environmental aspects); water management (including water/energy interactions); natural resource management in the context of sustainable development of tourism; the preservation and restoration of cultural heritage; development in the context of socio-economic modernisation (including innovation, the urban dimension, transport and support for the establishment of a Euro-Mediterranean information society).

A.4 Research for development

Rationale and objectives

The objective of this part of the programme is to tackle, jointly with developing country scientists, research problems linked directly to development challenges in the long-term mutual interest. The selection of topics to be covered will be based on policy dialogues with groups of countries and regions concerning their RTD needs, priorities and specific socio-economic requirements, thus targeting the most relevant themes.

Activities

Specific activities will be undertaken in the following areas :

- Mechanisms and socio-economic and policy conditions for sustainable development:
 - Analysis of the factors facilitating the adoption of existing innovations. In addition to the main areas below, this will cover sectoral and intersectoral areas such as the global information society, energy, transport, population, gender-related issues and urbanisation.
- Sustainable management and use of natural resources:
 - Promotion of a sustainable relationship between population pressure, food security and the use and management of ecosystems; improvement of the productivity of renewable natural resources and prevention of their degradation;

- Analysis of the evolution in demand for agricultural products in these countries and research on ways of meeting this demand; improvement of the efficiency of agricultural production chains with particular reference to quality and health.
- Health improvement:
 - Research on equitable, efficient health systems and their impact; the influence of structural and policy aspects; coverage of vulnerable groups; quality of care and its acceptability and affordability; understanding of the major health problems in these countries and the development of instruments for prevention and control of the predominant diseases.

A.5 Emerging economy and industrialised countries

Rationale and objectives

These countries are both competitors and partners for the Union in the global market place. This part of the programme will promote :

- bilateral as well as multilateral (e.g. G-7, OECD) policy dialogue in research in order to facilitate and monitor cooperation as well as to identify priorities of mutual interest;
- access to research know-how and opportunities available in these countries, thereby contributing to the improvement of the performance of European research and the competitiveness of the Union in the global economy;
- the sharing of the costs and benefits of global endeavours (e.g. human genome, information society and activities covered by the agreement on intelligent manufacturing systems -IMS);
- cooperation aimed at the solution of world-wide problems (e.g. global climate change).

Activities

In order to facilitate and enhance access to the research potential which exists outside the Union, for the benefit of the programmes' key actions and generic activities, this programme will implement scientific and technological cooperation agreements in certain areas with certain non-Union industrialised countries. This instrument could also be extended to cooperation in certain areas with some of the major emerging economy countries, i.e. certain developing countries which represent important markets, and which have developed to the point that in specific scientific and technological areas they are at par with industrialised countries.

B. TRAINING OF RESEARCHERS

A fellowship scheme will be established to allow young doctoral level researchers from developing countries, including Mediterranean and emerging economy countries, to work in European laboratories on projects of the framework programme. This will further contribute to the reinforcement of the scientific potential in these countries, while allowing Community research to benefit from their expertise.

Another fellowship scheme will be provided enabling a limited number of young Community researchers to work in industrially-oriented laboratories of the highest quality in non-Union countries in areas of particular interest to the Community. The Community's equal opportunities policy will be taken into account in the implementation of these fellowship schemes.

C. COORDINATION

Coordination of activities within the framework programme and with other Community programmes

In order to define and implement international research cooperation policy, this programme will take into account the policies, instruments, initiatives, interests and capabilities of other actors in this field. A key objective is therefore to ensure coordination with the other specific programmes and with other Community policies and instruments.

- Coordination with the other specific programmes will focus on ensuring consistency of approach to partners from outside the Union across the specific programmes, on monitoring and analysing (in terms of mutual benefit and utility) the participation of non-Union entities or international organisations in the other programmes, and on studying participation trends by country and by programme.

In addition, where there are opportunities for international research cooperation of mutual interest, this programme will help the other programmes in establishing effective cooperation, including the organisation of events aimed at providing information on the rules and policies applicable to Community RTD in general, and to participation of non-Union country entities and international organisations in particular.

- Coordination with the Community's external technical assistance programmes such as PHARE, TACIS, MEDA, EDF and the programmes for Asia and Latin America will increase the synergy between their actions and the work carried out under the research policy. This could provide effective support for the scientific and technological sector in the countries concerned.

Coordination with COST, EUREKA and international organisations

- **COST:** COST, which extends far beyond the Union, is a useful instrument to foster cooperation and stimulate mutual coordination of national and international activities on a very broad scale, both thematically and geographically, as well as to stimulate the integration of researchers from CEECs into pan-European activities. Its flexibility will continue to be used to intensify exploration of new ideas and fields of scientific and technological endeavour. Improved methods of ensuring complementarity between COST and the framework programme activities will be developed, in order to exploit better the complementarity of the two instruments, particularly as concerns the implementation of the key actions and generic activities of the framework programme. The programme will provide support for COST administration.

- **EUREKA:** Framework programme and EUREKA activities are closely complementary. The aim is to maximise, around a limited number of priority themes of common interest, the coordinated use of the two instruments. Simple and efficient ways of linking the fifth framework programme and EUREKA will be developed and applied primarily to large-scale projects within the key actions of the thematic programmes. Information and coordination mechanisms will be enhanced, so as to foster a positive development of these projects, while maintaining the distinct roles of EUREKA and the framework programme as well as their specificities and financial means.
- **INTERNATIONAL ORGANISATIONS:** Closer cooperation between the Community and international organisations involved in research activities and S&T policy development and their participation in all activities of the fifth framework programme will strengthen the overall coherence of research in Europe and optimise the use and exploitation of Europe's scientific infrastructures. The Commission will intensify its involvement in these organisations and encourage coordination between their Union members.

Coordination with Member States

The international research cooperation activities of the Community and the Member States often address similar or related issues. In full respect of the principle of subsidiarity, there is both scope and need for increased coordination in certain areas which would lift the individual efforts above critical mass and enhance overall effectiveness, flexibility and visibility of Community and Member States' activities. Building on the experience of initiatives such as the "European Initiative on Agricultural Research for Development", public and industrial research areas suitable for new coordinated actions will be identified and coordination activities initiated through this programme.

2 INTERNATIONAL COOPERATION PURSUED THROUGH THE OTHER FRAMEWORK PROGRAMME ACTIVITIES

The second form of international RTD cooperation referred to in the introduction concerns participation of third country entities and international organisations in the other specific programmes of the framework programme. The rules for such participation are set out in the Decision to be adopted pursuant to Art. 130j of the Treaty. This programme will monitor the extent of this participation and its benefit to the Community as well as its conformity with the Community's external policy. It will also assess whether such participation should be subject to the conclusion of an international agreement in order to provide equitable access for Community researchers to high quality RTD programmes in the third countries concerned and/or to ensure adequate arrangements for intellectual property rights.

ANNEX II

SPECIFIC RULES FOR IMPLEMENTING THE PROGRAMME

The specific programme will be implemented through the indirect RTD actions defined in Annexes II and IV to the fifth framework programme. In addition, the following rules specific to this programme will apply:

1. Accompanying measures

The accompanying measures will comprise in particular:

- studies in support of the specific programme, including the preparation of future activities,
- the exchange of information, conferences, seminars, workshops and scientific and technical meetings,
- recourse to external expertise, including access to scientific data bases, in particular for the purposes of the monitoring of the specific programme provided for in Article 5(1) of the fifth framework programme, the external assessment provided for in Article 5(2) of the fifth framework programme and the evaluation of indirect RTD actions and the monitoring of their implementation,
- dissemination, information and communication activities, including scientific publications, and activities for the exploitation of results,
- training schemes related to RTD activities covered by the specific programme,
- support for schemes to provide information and assistance for research players, including SMEs.
- support for initiatives to promote centres of excellence.

2. Exceptions from the financial participation rates

In the case of legal entities established in non-associated CEECs, NIS and developing countries:

- funding of RTD projects under the fifth framework programme may exceed 50% of the eligible total costs in order to ensure the quality of their materials and research equipment,
- the expenditure on staff and equipment set out in the detailed rules for participation and dissemination may be extended in the case of participation in the RTD projects on the basis of eligible additional costs,

in accordance with the objectives of the specific programme.

3. Coordination arrangements

The Commission will endeavour to ensure complementarity between the indirect RTD actions within the programme, in particular by grouping them around a common objective, and to avoid duplication, while respecting the legitimate interests of proposers of indirect RTD actions.

Coordination will also be ensured between actions under the specific programme and those carried out in:

- other specific programmes implementing the fifth framework programme,
- the research and training programmes implementing Council Decision .../.../Euratom of ... concerning the fifth framework programme of the European Atomic Energy Community (Euratom) for research and training activities (1998-2002),⁸
- other European research frameworks such as EUREKA and COST and by international organisations,
- other Community research-related instruments such as PHARE, TACIS, MEDA, EDF, the programmes for Asia and Latin America, the EIF, the Structural Funds and the EIB.

It will comprise:

- (i) the identification of common themes or priorities, resulting in particular in:
 - the exchange of information,
 - the carrying out of work decided upon jointly, entailing in particular the joint initiation of one of the procedures referred to in Article 9 of the rules for participation and dissemination,
- (ii) the reassignment of proposals for indirect RTD actions between specific programmes or between a specific programme and a research and training programme.
- (iii) support for the EUREKA Secretariat and for the COST Secretariat⁹ and activities.

⁸ OJ No L

⁹ Given the nature of COST, expenditure relating to the Secretariat (non-regular staff, missions, meetings, information, etc.) will be treated as operating expenditure.

FINANCIAL STATEMENT

1. TITLE OF OPERATION..

Proposal for a Council Decision adopting a specific programme for research, technological development and demonstration on "Confirming the international role of Community research" (1998 to 2002).

2. BUDGET HEADING INVOLVED..

Sub-section B6, heading B6-6211 "Confirming the international role of Community research".

3. LEGAL BASIS ..

Article 130i of the EC Treaty

European Parliament and Council Decision No ... of ... on the fifth framework programme of the European Community for research, technological development and demonstration (1998-2002) (OJ No L ..., ..., p. ...).

4. DESCRIPTION OF OPERATION.

4.1 General objective of the operation

The main objectives of this horizontal theme are to promote international S/T cooperation; to reinforce Community capacities in the fields of science and technology; to generally support the achievement of scientific excellence within the wider international framework; and to contribute to the implementation of the Community's external policy, also with the accession of new members in mind.

Objectives and strategic approach of the programme:

- to promote scientific and technological cooperation between undertakings, organisations and researchers from third countries and from the Community;
- to facilitate access for research centres and undertakings established in the Community to scientific and technological knowledge available outside the Community and useful to the Community's interests;
- to enhance the position and role of Community research in the international scientific and technological arena and to promote a European scientific and technological culture;

- to prepare for the accession of new Member States;
- to help European research players acquire information and gain experience of research capacity, activities and priorities of industrialised third countries and "emerging economy" countries.

International RTD cooperation will be pursued in two forms in the fifth framework programme: firstly, through this "international cooperation" programme and secondly, through the other specific programmes.

4.2 Period covered by the operation

1998 to 2002

The arrangements for renewal of the operation are provided for in Article 130i of the EC Treaty.

5. CLASSIFICATION OF EXPENDITURE OR REVENUE.

5.1 NCE.

5.2 DA.

5.3 Type of revenue involved:

Certain Associated States will contribute to the financing of the specific programme.

In accordance with Article 27 of the Financial Regulation, certain revenue may be available for re-use.

6. TYPE OF EXPENDITURE OR REVENUE.

The implementation arrangements for the specific programme are as follows:

6.1 Indirect RTD actions and financial participation rates

The indirect RTD actions will comprise: shared-cost actions, training fellowships, thematic networks, concerted actions and accompanying measures.

The financial participation rates of the fifth framework programme for these actions is as follows:

Indirect RTD action	Participation rate:
RTD projects	50% of total eligible costs ^{1, 2}
Demonstration projects	35% of total eligible costs ^{1, 2}
Combined RTD/demonstration projects	35% to 50% of total eligible costs ^{1, 2, 3}
Support for access to research infrastructures	Maximum of 100% of additional eligible costs
"Cooperative research" projects	50% of total eligible costs ¹
Exploratory awards	75% of total eligible costs
Training fellowships	Maximum of 100% of additional eligible costs, ^{1, 4}
Thematic networks	Maximum of 100% of additional eligible costs
Concerted actions	Maximum of 100% of additional eligible costs
Accompanying measures	Maximum of 100% of total eligible costs

The financial participation rate for legal entities established in non-associated CEECs, NIS and developing countries may exceed 50% of the eligible total costs in the case of RTD projects in order to ensure the quality of materials and research equipment. The expenditure on staff and equipment set out in the detailed rules for participation and dissemination may be comprehensive in the case of entities participating on the basis of eligible additional costs.

6.2 The coordination arrangements For research actions within the same area consist in identifying common themes or priorities, leading, *inter alia*, to the exchange of information, the performance of jointly agreed work, the reassignment of indirect RTD actions between specific programmes or between a specific programme and a research and teaching programme.

¹ These rates may have to be adjusted in particular cases to comply with the Community framework on State aid for research and development and Article 8 of the WTO Agreement on subsidies and countervailing measures.

² In the particular case of legal entities which do not keep analytical accounts, the eligible additional costs engendered by the research will be funded at the rate of 100%.

³ 35% for the "demonstration" part and 50% for the "RTD" part.

⁴ This will normally be about 50% of the eligible total costs in the case of industry host fellowships in undertakings.

7. FINANCIAL IMPACT.

7.1 Method of calculating total cost of operation.

The estimated amount required is ECU 491 million for the period from 1998 to 2002.*

* Because of the nature of COST, expenditure relating to its Secretariat (non-regular staff, missions, meetings, information, etc) will be treated as operating expenditure.

7.2 Operational expenditure included in Part B of the Budget

Administrative expenditure: ECU 46.6 million, or 9.5 % of the estimated amount required: ECU 491 million.

7.3 Indicative schedule of appropriations

The schedule is established on the basis of the breakdown of the maximum overall amount and the indicative schedule of appropriations for the period 1998-2002 included in the proposal for the fifth framework programme.

Commitment appropriations		Payment appropriations				Total.
		1999	2000	2001	2002 and subsequent years	
1999	70	23	24	14	9	70
2000	117		43	36	38	117
2001	141			40.2	100.8	141
2002	163				163	163
Total	491	23	67	90.2	310.8	491

The final amounts will be laid down by the Budgetary Authority.

8. FRAUD PREVENTION MEASURES.

There is a wide range of administrative and financial checks at all stages of the procedure for awarding and executing research contracts, including the following:

- Prior to conclusion of the contract:
 - selection of proposals on the basis of the scientific value of the project and of an assessment as to whether the research costs are realistic in relation to the nature of the research, its duration and its potential impact;
 - analysis of the financial data transmitted by the proposers on their contract negotiation form.
- After the contract has been signed:
 - scrutiny of statements of expenditure prior to payment, carried out at two levels (by the scientific officer and the financial officer);
 - on-the-spot checks enabling the detection of errors or other irregularities through an examination of the supporting documents. In order to make these checks more effective, the Commission's departments have set up an audit unit which coordinates all the checks performed. These checks are either carried out by members of the audit unit or entrusted to auditing companies with which the Commission has concluded contracts, under the supervision of officials from the audit unit;
 - internal audit by the Financial Controller;
 - unannounced inspections by the Commission's Financial Controller and by the Court of Auditors of the European Union.

9. ELEMENTS OF COST-EFFECTIVENESS ANALYSIS.

9.1 Specific and quantified objectives; target population

This specific programme consists of:

9.1.1 *Specific activities of the programme*

A. Cooperation with certain categories of third countries

A.1 States in the pre-accession phase

The objective of the programme is to help accelerate the reform in the science structures of these countries, while safeguarding the highly qualified human resources and building up the fundamental scientific infrastructure.

Activities

- Specific activities will be undertaken to promote *centres of excellence*.
- *Accompanying measures* will be developed to strengthen the participation of these countries in other programmes of the framework programme.

A.2 NIS and CEECs not in the pre-accession phase

The Union's objectives in scientific cooperation with these countries are to support efforts to develop a pluralistic scientific and technological system and to preserve and develop their research excellence by building on existing expertise in order to help them solve some of their major economic and societal problems.

Activities

This programme will undertake joint research projects and concerted actions in areas not covered by the other specific programmes:

- Structural problems of transition at regional level will first be identified.
- Another activity will involve consolidating the *research potential in these countries* and promoting its interaction with the European scientific community. This will be achieved by building on the experience already gained through cooperation structures such as COPERNICUS, COST, EUREKA, PHARE and TACIS (notably the ISTC and STCU), as well as through INTAS, provided that a new agreement is reached between its members on its continuation.

A.3 Mediterranean partner countries

Certain specific actions will be undertaken with the Mediterranean partner countries in order to strengthen the research and technology dimension of the Euro-Mediterranean partnership, improving where appropriate their research and technological development capabilities and promoting innovation. They will focus on the regional aspects of some fields.

A.4 Research for development

The objective of this part of the programme is to tackle, jointly with developing country scientists, research problems linked directly to development challenges. The selection of topics to be covered will be based on policy dialogues with groups of countries and regions concerning their RTD needs, priorities and specific socio-economic requirements, thus targeting the most relevant themes.

Specific activities will be undertaken in some of the following areas :

- Mechanisms and conditions for sustainable development;
- Sustainable management and use of natural resources;
- Promotion of a sustainable relationship between population pressure, food security and the use and management of ecosystems;
- Analysis of the probable evolution in demand for agricultural products as a result of globalisation, population growth and urbanisation;
- Improvement of the health of vulnerable groups.

A.5 Emerging economy and industrialised countries

This part of the programme will promote :

- bilateral as well as multilateral (e.g. G-7, OECD) policy dialogue in research;
- access to research know-how and opportunities available in these countries;
- the sharing of the costs and benefits of global endeavours;
- cooperation aimed at the solution of world-wide problems.

B. Training of researchers

A fellowship scheme will be established to allow young doctoral level researchers from developing countries, Mediterranean countries and emerging economy countries to work in European laboratories on projects of the framework programme.

Another fellowship scheme will be provided enabling a limited number of young Community researchers to work in industrially-oriented laboratories of the highest quality in non-Union countries in areas of particular interest to the Community.

C. Coordination

Coordination of activities within the framework programme and with other Community programmes

A key objective is to ensure coordination with the other specific programmes and with other Community policies and instruments, the Community's external technical assistance programmes such as PHARE, TACIS, MEDA, EDF and the programmes for Asia and Latin America.

Coordination with COST, EUREKA and international organisations.

Coordination with Member States.

9.1.2 *International cooperation pursued through other framework programme activities*

The second form of international RTD cooperation referred to in the introduction concerns participation of third country entities and international organisations in the other specific programmes of the framework programme. The rules for such participation are set out in the Decision to be adopted pursuant to Art. 130j of the Treaty.

This programme will monitor the extent of this participation and its benefit to the Community as well as its conformity with the Community's external policy. It will also assess whether such participation should be subject to the conclusion of an international agreement in order to provide equitable access for Community researchers to high-quality RTD programmes in the third countries concerned and/or to ensure adequate arrangements for intellectual property rights.

The target population of this operation is the following:

Research centres, universities, bodies, enterprises and researchers from the Community and from third countries.

9.2 **Grounds for the operation.**

Research and technological development are increasingly playing a key part in the economic performance of international partners and competitors. Some objectives of the fifth framework programme cannot be attained in full unless the Union's research effort is supplemented by selected and targeted cooperation beyond its frontiers.

Research cooperation is also, more than ever, an important aspect of the Union's external relations.

The research actions proposed conform to the objectives of the framework programme, as well as to the criteria set out both in Annex 1 to the framework programme and in the specific programme.

These actions are, therefore, designed to ensure added value at European level and by their nature reflect major questions of European scale.

Under Article 130f of the EC Treaty, the Community will by this new action continue to strengthen European industry's science and technology base, foster the development of international competitiveness and promote research activity as deemed necessary under other chapters of the Treaty.

This continuation is proposed following an assessment, in line with the SEM 2000 initiative, of the actions of the past five years.

This proposal for a new operation follows the conclusions of the five-year assessment panel, notably in proposing that efforts be concentrated.

9.3 Monitoring and evaluation of the operation

9.3.1 Monitoring of the projects

Ex-ante evaluation

In order to guarantee the quality of RTD projects, the Commission will evaluate all the proposals received, following calls for proposals, on the basis of the priorities indicated in the specific programmes and the work programmes. For this purpose, it will be assisted, *inter alia*, by independent experts.

Intermediate and final project evaluation:

It is the responsibility of the project coordinator to send the Commission, at regular intervals, the technical and financial progress reports; the detailed final (technical and financial) report covering all the work carried out, setting out the results obtained and the objectives attained and summary reports for publication. These reports will be monitored by the Commission staff, possibly with the assistance of outside experts.

9.3.2 Monitoring and evaluation of the specific programme

Annual monitoring of the implementation of the specific programme:

The Commission will examine each year, with the help of appropriately qualified independent experts, progress with the implementation of the specific programme in the light of the criteria set out in Article 3(2) of the specific programme.

It will assess, in particular, whether the objectives, priorities and financial resources are still appropriate to the changing situation. Where appropriate, it will submit proposals to adapt or supplement the specific programme.

Five-year and/or final evaluation:

In addition, before submitting its proposal for a Sixth Framework Programme, the Commission will have an external assessment conducted by high-level independent experts on the management of, and progress made in, Community activities carried out during the five years preceding the assessment, in particular in the light of the criteria set out in Article 3(2) of the specific programme. The Commission will communicate the conclusions of this assessment, accompanied by its comments, to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions.

Furthermore, in accordance with Article 130p of the Treaty establishing the European Community, the Commission produces an annual report to the European Parliament and the Council on activities relating to research and technological development and the dissemination of results.

10. ADMINISTRATIVE EXPENDITURE (PART A OF THE BUDGET).

Not applicable.

Proposal for a
COUNCIL DECISION
adopting a specific programme for research,
technological development and demonstration
on "Promotion of innovation and encouragement of participation of SMEs"
(1998 to 2002)

**PROPOSAL FOR A COUNCIL DECISION
adopting a specific programme for research,
technological development and demonstration on "Promotion of innovation and
encouragement of participation of SMEs" (1998 to 2002)**

0182 (CNS)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 130i(4) thereof,

Having regard to the proposal from the Commission,¹

Having regard to the opinion of the European Parliament,²

Having regard to the opinion of the Economic and Social Committee,³

Whereas by Decision No .../EC,⁴ the European Parliament and the Council adopted the fifth framework programme of the European Community (hereinafter referred to as the fifth framework programme) for research, technological development and demonstration (hereinafter referred to as RTD) activities for the period 1998 to 2002 specifying *inter alia* the activities to be carried out in the field of promotion of innovation and encouragement of participation of SMEs;

Whereas Article 130i(3) of the Treaty stipulates that the framework programme shall be implemented through specific programmes developed within each activity under the framework programme, and that each specific programme shall define the detailed rules for implementing it, fix its duration and provide for the means deemed necessary;

Whereas, in accordance with Article 4(2) of Decision No 1110/94/EC of the European Parliament and of the Council of 26 April 1994 concerning the fourth framework programme of the European Community activities in the field of research, technological development and demonstration (1994 to 1998)⁵ and Article 4(2) of the Council Decisions on the specific programmes implementing the fourth framework programme, the Commission has had an external assessment conducted which it has transmitted to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions together with its conclusions and comments;

¹ OJ No , p.

² OJ No , p.

³ OJ No , p.

⁴ OJ No , p.

⁵ OJ No L 126, 18.5.1994, p. 1. Decision last amended by Decision No 2535/97/EC (OJ L 347, 18.12.1997, p. 1).

Whereas the Scientific and Technical Research Committee has been consulted on the scientific and technological content of the specific programmes, as set out in the working paper⁶ adopted by the Commission on 5 November 1997;

Whereas, in accordance with Article 130j of the Treaty, Council Decision .../.../EC⁷ of ... concerning the rules for the participation of undertakings, research centres and universities and for the dissemination of research results (hereinafter referred to as the rules for participation and dissemination) applies to this specific programme and allows the participation of the Joint Research Centre in the indirect actions covered by this specific programme;

Whereas, for the purpose of implementing this programme, in addition to cooperation covered by the Agreement on the European Economic Area or by an association agreement, it may be appropriate to engage in international cooperation activities, on the basis of notably Article 130m of the Treaty, with third countries or international organisations;

Whereas implementation of this programme will also comprise activities and mechanisms aimed at stimulating, disseminating and exploiting RTD results, in particular vis-à-vis small and medium-sized enterprises, and activities to stimulate the mobility and training of researchers;

Whereas, in accordance with the objectives of the first action plan for innovation, research activities under the fifth framework programme should be geared more towards innovation;

Whereas the implementation of this programme should be monitored with a view to adapting it, where appropriate, to scientific and technological developments; whereas in due course there should also be an assessment of progress with the programme by independent experts,

⁶ COM(97)553 final of 5.11.1997.

⁷ OJ No L

HAS ADOPTED THIS DECISION*Article 1*

In accordance with Article 3(1) of the fifth framework programme, the specific programme on "Promotion of innovation and encouragement of participation of SMEs" (hereinafter referred to as the specific programme) is hereby adopted for the period from [the date of adoption of this programme] to 31 December 2002.

Article 2

1. In accordance with Annex III to the fifth framework programme, the amount deemed necessary for carrying out the specific programme (hereinafter referred to as the amount) is ECU 350 million, including a maximum of 7,70% for the Commission's administrative expenditure.
2. Of this amount
 - ECU 73,8 million is for the period 1998 to 1999, and
 - ECU 276,2 million is for the period 2000 to 2002.

Where appropriate, the latter figure will be adapted in accordance with Article 3(3) of the fifth framework programme.

3. The budgetary authority shall, in compliance with the scientific and technological objectives and priorities laid down in this Decision, set the appropriations for each financial year taking into account the availability of resources within the multiannual financial perspective.

Article 3

1. The general outlines, the objectives and the priorities for the specific programme are set out in Annex I. They are consistent with the fundamental principles and the three categories of selection criteria indicated in Annex I to the fifth framework programme.
2. In accordance with these principles and criteria the selection criteria indicated in Article 10 of the rules for participation and dissemination shall be applied for the selection of the RTD activities to be carried out.

A selection criterion specific to this programme shall also be applied: the participation of industrial entities in the shared-cost actions should be appropriate to the nature of the activity.

All these criteria shall be complied with in the implementation of the programme, including the work programme referred to in Article 5(1), although they may be weighted differently.

3. The rules for participation and dissemination shall apply to the specific programme.
4. Detailed rules for financial participation by the Community in the specific programme are defined in Article 4 of the fifth framework programme.
5. The indirect RTD actions under the specific programme are defined in Annexes II and IV to the fifth framework programme.

Specific rules for implementing the programme are set out in Annex II.

Article 4

In the light of the criteria set out in Article 3, and the scientific and technological objectives and priorities set out in Annex I, the Commission shall:

- (a) monitor the implementation of the specific programme and, where appropriate, submit proposals for adapting it, in accordance with Article 5(1) of the fifth framework programme,
- (b) have the external assessment provided for in Article 5(2) of the fifth framework programme conducted concerning the activities carried out in the fields covered by the specific programme.

Article 5

1. The Commission shall draw up a work programme specifying:
 - (a) the content of Annex I,
 - (b) the indicative timetable for the implementation of the specific programme,
 - (c) the coordination arrangements specified in Annex III,
 - (d) and, where necessary, the selection criteria and the arrangements for applying them for each type of indirect RTD action.

The work programme shall be updated where appropriate.

- 2. For the purpose of implementing the indirect RTD actions, the Commission shall, on the basis of the work programme, initiate the procedures set out in the rules for participation and dissemination, primarily through calls for proposals.

Article 6

- 1. The Commission shall be responsible for the implementation of this specific programme.
- 2. It shall be assisted by a Programme Committee composed of representatives of the Member States and chaired by the representative of the Commission.
- 3. The representative of the Commission shall submit to the Programme Committee a draft of the measures to be taken concerning:
 - the drawing-up and updating of the work programme referred to in Article 5(1),
 - the drawing-up of the terms of reference for the external assessment provided for in Article 5(2) of the fifth framework programme.

Article 7

- 1. The Programme Committee shall deliver its opinion on the draft measures referred to in Article 6(3) within a time limit which the Chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148(2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the Committee shall be weighted in the manner set out in that Article. The Chairman shall not vote.

The Commission shall adopt the measures envisaged if they are in accordance with the opinion of the Committee.

If the measures envisaged are not in accordance with the opinion of the Committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a proposal relating to the measures to be taken. The Council shall act by a qualified majority.

If, on expiry of a period of six weeks from the referral of the matter to the Council, the Council has not acted, the proposed measures shall be adopted by the Commission.

- 2. The Commission shall regularly inform the Programme Committee of progress with the implementation of the specific programme, and shall in particular provide it with information about the results of the evaluation and selection of the indirect RTD actions.

Article 8

This Decision is addressed to the Member States.

Done at Brussels,

For the Council

The President

ANNEX I

THE GENERAL OUTLINES, THE SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES AND THE PRIORITIES

INTRODUCTION

Innovation is a key factor in industrial competitiveness, sustainable economic and social development and job creation. It is a complex phenomenon involving many players (firms, universities, research centres and financial operators, etc.) and is an important component of behavioural developments and overall social dynamics. Business competitiveness depends to a large extent on the ability to innovate: as a result of the development of new products and services, costs can be contained and competition can be handled. In the information technology sector, for example, 78% of income is derived from products that have been on the market for two years or less. It is therefore essential to promote innovative activities, including the creation of innovative businesses, and to facilitate the dissemination and exploitation of research results and support technology transfer. Europe needs to exploit more effectively its research activities and its high level of creativity in terms of knowledge and know-how in order to give the economy and society the full benefit of this. It is vital that the research effort should be accompanied and guided by an ambitious European innovation policy.

Small and medium-sized enterprises (SMEs) are important innovation vectors and players. They play an essential role in the European economy and their development can make a vital contribution to the emergence of new activities, the competitiveness of European industry, economic growth and employment; they also have special features which necessitate appropriate stimulation and follow-up measures. Action at European level is needed, to supplement the initiatives taken by the Member States, in order to help SMEs to globalise their activities and gain access to new technologies, be they high-tec SMEs or SMEs which, though having little or no research capacities of their own, need to make use of new technologies developed by others.

Promoting innovation and encouraging SME participation, although not synonymous, are closely linked activities. This programme will therefore help to optimise the efforts devoted to these two themes.

Strategic objective of the programme

The strategic aim is to improve the economic and social impact of research and development activities, in particular under the framework programme, by ensuring better dissemination and exploitation of their results and the transfer and dissemination of technologies from various sources, taking into account the needs of customers and users.

This aim will be pursued by establishing a coherent innovation policy contributing towards the implementation of the first action plan for innovation, and by paying particular attention to SMEs and their participation in the fifth framework programme.

The activities carried out in this programme will be complementary to activities undertaken within Member States. They will support, supplement and give direction to activities carried out under other specific programmes or, where appropriate, in the context of other Community activities, in order to achieve this objective.

Links with other Community programmes and activities

The other programmes will contribute actively, in close coordination and in interaction with this programme, to the attainment of this strategic objective and pursue, to this end, the general objectives set out in Annex II (third activity) to the fifth framework programme.

In the context of the fifth framework programme, this programme will promote and coordinate activities carried out in relation to innovation and SMEs, notably in coherence with the SME policy.

On the basis of the measures, instruments and expertise developed in the context of its specific activities, it will in particular focus on the design of mechanisms to facilitate the exploitation and transfer of results, the participation of SMEs, the evaluation of results, and the post-auditing of their exploitation in order to evaluate their economic and social impact. Action in the context of this programme will be based in particular on the activities carried out by the "innovation units", of which it will coordinate the activities in order to integrate the innovation dimension in the implementation of the programmes.

COORDINATION ACTIVITIES RELATING TO INNOVATION AND SME PARTICIPATION

Objectives

The aim is to coordinate and support the efforts under the thematic programmes to integrate the "innovation" and "SMEs" dimensions when setting their priorities, establishing their work programmes, and carrying out their activities; to ensure the overall consistency of activities relating to innovation and SMEs and their harmonisation within the thematic programmes; and to ensure the optimum use of skills, experience and infrastructure existing at the horizontal level or in other programmes.

Activities in the field of innovation

In order to achieve the strategic objective of the programme, the bulk of the work will be carried out within the thematic programmes under the impulse of the innovation units so as to take account of the specific features of the research topics and ensure the best possible match between the exploitation of results and their application context.

Firstly, the programme will ensure synergy between the innovation units, and will interact with the thematic programmes in respect of the definition and implementation of their specific tasks, which could, in particular, comprise:

- providing support for activities carried out with regard to innovation, such as the follow-up of technology transfer and the launch of projects with a demonstration effect;
- exploiting the thematic networks, activities and mechanisms stimulating the utilisation and transfer of results or the creation of innovative firms, e.g. by facilitating access to private funding;
- organising studies to evaluate projects and their results with a view to promoting their exploitation, in particular through a technology implementation plan.

Secondly, this programme will contribute, together with the thematic programmes, to defining the methods and mechanisms contributing towards an increase in the exploitation of the results of the research projects under these programmes and ensuring the coherence and effectiveness of the dissemination of information on the research and development projects and results via the horizontal network and service infrastructures (CORDIS, IRCs).

Activities to increase the participation of SMEs

The strategic objective of the programme entails the coordination of support for SME participation in RTD and demonstration activities carried out in the framework of these programmes:

- “cooperative research” schemes enabling at least three mutually independent SMEs from at least two different Member States to jointly seek the resolution of their common technological problems internally or by entrusting it to third legal entities, including industrial entities, with appropriate research or technological validation capacities;
- schemes to support and encourage SME participation in collaborative and cooperative research projects (for example on the basis of subsidies for the preparatory phase known as “exploratory awards”), respecting SMEs’ need for a flexible and easily accessible support system.

These schemes aimed at encouraging and facilitating SME participation in RTD activities relate to all the objectives and priorities of the specific programmes in their entirety.

In addition, the programme will provide support for organising and improving the dissemination and exploitation of results within the thematic programmes, in order, among other things, to facilitate SME participation in validation and demonstration projects in the context of the key actions.

ACTITITIES SPECIFIC TO THE HORIZONTAL PROGRAMME

PROMOTION OF INNOVATION

Supplementing the activities carried out within the thematic programmes, the specific activities will help to promote a favourable environment for innovation in Europe and to

establish a framework enabling a large number of economic operators to benefit from innovation.

(i) *Making better use of the results of Community research*

Objective

The aim is to increase the level of use made of the results of research and thus to contribute to the general objective of improving the economic and social impact of framework programme activities.

Activities

- identification and design of mechanisms to facilitate, in the life-cycle of projects, the protection of knowledge acquired, the exploitation or transfer of the technologies and results produced and access to methods of private financing making it possible to ensure that use is made of the results. Organisational changes liable to promote innovation will also be encouraged;
- organisation of exchanges of information and good practices between programmes;
- promotion of the implementation of these mechanisms by other programmes, in particular with the assistance of the innovation units.

(ii) *New approaches to technology transfer*

Objective

The European Union's inadequate performance as far as innovation is concerned is to a large extent attributable to the uneven development in Europe of the "innovation culture". This culture can be developed by encouraging experiments concerning the transfer of technology on an international scale.

The aim is, in harmony with the activities carried out under the thematic programmes, to develop, validate and implement methodologies in the context of pilot/demonstration technology-transfer projects, taking into account the features of particular sectors of activity.

Activities

- Promoting the take-up of new technologies, and analysing the technological, economic, organisational and social aspects observed in this process;
- Contributing to the transnational dissemination and utilisation of results not arising from the specific programmes.

These activities could include an international dimension (international technology-transfer trials in collaboration with other Community initiatives) and seek to explore new forms of technology transfer.

(iii) Studies and good practices**Objectives**

To bridge the innovation gap, the Community should identify, analyse and promote the application of good innovation practices.

The aim is to analyse and benchmark innovation performances and policies in a common reference framework and promote concertation, exchanges, and the dissemination and application of good practices.

Activities

- preparation and periodical publication of an innovation trend chart in accordance with the action plan for innovation in Europe;
- organisation of schemes to promote good practices with regard to innovation (in particular concerning the financing, setting-up and development of innovative businesses, and protection and transfer of technology);
- establishment and regular updating of a "knowledge" base on innovation policies, practices and performances (in particular concerning the financing, setting-up and development of innovative businesses, and protection and transfer of technology).

ENCOURAGING SME PARTICIPATION**(i) A one-stop entry point****Objective**

The aim is to make it easier for SMEs to take part in Community programmes by offering them an additional means of access, a single complementary entry point, common to all the programmes and making use of existing support networks in Member States.

Activities

Setting-up of an infrastructure to enable SMEs:

- to be made aware of the importance and impact of Community RTD activities and to make their needs known,
- to receive information about the programmes and have access to assistance with the preparation of proposals (including help with the creation of consortiums),
- to participate more easily in Community programmes,
- to submit proposals at any time, in the context of a permanently open call, with a view to benefiting from measures specific to them, such as exploratory awards or "cooperative research" activities (CRAFT).

(ii) Joint support and assistance instruments**Objective**

The aim is to simplify and harmonise SME participation conditions in order to supplement and strengthen the impact of the one-stop office, preferably through the fullest possible use of the most suitable electronic means (electronic information packages and electronic submission of proposals, "help line", specialised Intranet networks, etc.).

Activities

- preparation of joint contractual and information-management tools;
- assistance for SMEs supplementing that provided directly by the local networks and the thematic programmes;
- assistance for SMEs while projects are being carried out: this may take the form of "training" workshops open to project coordinators or intermediaries concerning the management of research contracts, the coordination of projects or other topics of general interest to SMEs.

(iii) Economic intelligence**Objective**

The aim is to help SMEs to identify their needs and anticipate technological trends, and to direct them towards Community instruments in particular which will enable them to do so.

Activities (in liaison with the IPTS)

- identification of relevant information, using existing sources, on market trends and the state of the art (e.g. through workshops bringing together suppliers, users, SMEs and large firms);
- making this information available to SMEs using the existing information networks and services.

JOINT INNOVATION/SMEs ACTIVITIES**(i) European network for the promotion of research and innovation**

The programme should rationalise and coordinate the networks providing information and assistance concerning the Community's research and innovation activities, thus constituting an effective infrastructure for information, assistance, cooperation and innovation-promotion, aimed particularly at SMEs and making full use, in particular, of the existing networks of Innovation Relay Centres (IRCs) and CRAFT contact points.

Objectives

The aim is to increase firms' receptiveness to technologies capable of helping them to improve their innovative capacity, to encourage transnational transfers of technologies, whatever their origin, to promote the dissemination and exploitation of the results of Community research, and to inform and assist potential participants in such research activities.

Activities

- promotion of technology transfer reflecting the needs of the local economic, industrial and social fabric;
- establishment of means of cooperation and transnational partnerships between firms;
- support for the dissemination and exploitation of the results of Community research activities, e.g. by organising "technology fairs";
- promotion of innovation through experimental networks and services;
- assistance to guide firms' participation in the programmes and help them put together transnational projects.

(ii) *Electronic information services and other means of dissemination*

Objectives

The aim is to group together and encourage the dissemination, in the context of a joint information service, of all the data needed to publicise more effectively research and innovation activities, the procedures for carrying them out, and their results; to inform the general public about the socio-economic impact of innovation policies, and fuel the debate about the issues at stake where these policies are concerned, given the needs of individuals.

Activities

- consolidation of the CORDIS Community information service by reorganising the information gathering and circulation mechanisms, improving ease of access (multilingualism, "users" interface), adapting the content to the needs of SMEs and their support networks and developing tailor-made tools;
- extension of the ERGO (European Research Gateway On-line) pilot scheme by establishing a link between CORDIS and the national scientific and technical information sources.

(iii) *Intellectual property*

Objectives

The aim is, first of all via information and where appropriate via pilot activities, to encourage the use of knowledge-protection systems - for the purposes either of effective protection or of information-gathering (research results, market trends, search for industrial alliances, etc.) - and to facilitate access to the various sources of information about intellectual and industrial property. Another objective is to protect the knowledge and the possession of the Community (JRC) and to provide assistance to framework programme participants.

Activities

- contribution to the establishment of an information system giving access to the various sources of information about patents, other intellectual property rights, the legislation in force and the interpretation thereof;
- creation of a "help-desk" for participants in Community programmes;

- activities concerning the protection and utilisation of research results belonging to the Community, in liaison with the JRC;
- carrying-out of pilot activities such as evaluation of the innovative nature of project proposals ("quick scan"); collaboration with the European Patents Office and the national offices.

(iv) Access to private innovation financing

Objectives

The aim is to provide SMEs, and in particular SMEs participating in Community research activities, or exploiting the results thereof, with information and advice about the opportunities for access to private innovation-financing instruments (financial markets, venture capital) and to promote cooperation between financial sources, researchers and industry via pilot activities.

Activities

- development of an information and assistance service to facilitate access to sources of private financing;
- implementation, in the context of the thematic programmes or with the assistance of the innovation-support networks, of *ad hoc* awareness-raising, incentive and training schemes, and organisation of transnational investment forums bringing together entrepreneurs, researchers, and financial operators, and in particular continuation of the LIFT (Links to Innovation Financing for Technology) activities;
- exchanges of experience with the players concerned in the Member States, and establishment of transnational networks involving private and public operators on specific projects, and carrying-out of pilot activities to try out new approaches (e.g. technology assessment, mobilisation of local capital, benchmarking of performances);
- facilitating the establishment of contacts with financial sources with a view to the exploitation of the results of Community research.

(v) Mechanisms to facilitate the setting-up and development of innovative firms

Objectives

The aim is, in accordance with the guidelines of the Amsterdam European Council, to analyse, identify and validate, in the context of pilot activities, new approaches to support for the setting-up and development of innovative firms, and to encourage private investment (in particular venture capital)⁸ in such firms.

⁸ Commission Communication "Risk capital, a key to job creation in the European Union"; SEC(98)552 final.

Activities

- study and analysis of obstacles to the private financing of innovation and measures to create an environment favourable to the setting up and development of innovative firms,
- targeting of private financing on the early stages of innovative high-tech projects, and firms with a substantial growth potential, in particular via initiatives based on the experience acquired with the I-TEC pilot project (innovation and equity capital) in cooperation with the European Investment Fund (EIF), the European Investment Bank (EIB) and other financial operators,
- assistance for fund managers (and in particular managers of venture capital funds) to acquire lasting expertise in the evaluation and management of this type of project.

ANNEX II

SPECIFIC RULES FOR IMPLEMENTING THE PROGRAMME

The specific programme will be implemented through the indirect RTD actions defined in Annexes II and IV to the fifth framework programme. In addition, the following rules specific to this programme will apply:

1. Accompanying measures

The accompanying measures will comprise in particular:

- studies in support of the specific programme, including the preparation of future activities and the innovation trend chart,
- the exchange of information, conferences, seminars, workshops and scientific and technical meetings on topics related to activities under the programmes,
- mechanisms to facilitate the protection of knowledge, and access to private financing methods,
- recourse to external expertise, including access to scientific data bases, in particular for the purposes of the monitoring of the specific programme provided for in Article 5(1) of the fifth framework programme, the external assessment provided for in Article 5(2) of the fifth framework programme and the evaluation of indirect RTD actions and the monitoring of their implementation,
- dissemination, information and communication activities, including scientific publications, and activities for the exploitation of results and the transfer of technologies,
- training schemes related to RTD activities covered by the specific programme, other than Marie Curie fellowships
- support for schemes to provide information and assistance for research players, including SMEs,
- recourse to external capacities for the establishment of and access to services and networks for information, assistance and promotion of research and innovation.

2. Pilot activities

The pilot activities will be carried out in the areas indicated in Annex I to this Decision. They will be aimed at trying out new measures which require specific implementing arrangements, on account of their nature, their context and the categories of players that they involve. In accordance with Article 9(3) of the rules for participation and dissemination, these arrangements may depart from the procedures generally applicable to

indirect RTD actions, on condition that they provide for evaluation and selection procedures respecting the principles of equity and transparency.

3. Coordination arrangements

The Commission will endeavour, within the programme, to ensure complementarity between the indirect RTD actions, in particular by grouping them around a common objective, and to avoid duplication, while respecting the legitimate interests of proposers of indirect RTD actions.

Coordination will also be ensured between actions under the specific programme and those carried out in:

- other specific programmes implementing the fifth framework programme,
- the research and training programmes implementing Council Decision .../.../Euratom of ... concerning the fifth framework programme of the European Atomic Energy Community (Euratom) for research and training activities (1998-2002),⁹
- other European research frameworks such as Eureka and COST,
- other Community research-related instruments such as PHARE, TACIS, MEDA, the EIF, the Structural Funds and the EIB,

It will comprise:

- (i) the identification of common themes or priorities, resulting in particular in:
 - the exchange of information,
 - the carrying out of work decided upon jointly, entailing in particular the joint initiation of one of the procedures referred to in Article 9 of the rules for participation and dissemination,
 - the examination of the lessons learned from carrying out this work and the evaluation of their economic and social impact,
- (ii) the reassignment of proposals for indirect RTD actions between specific programmes or between a specific programme and a research and training programme.

⁹ OJ No L

FINANCIAL STATEMENT

1. TITLE OF OPERATION. .

Proposal for a Council Decision adopting a specific programme for research, technological development and demonstration on "Promotion of innovation and encouragement of participation of SMEs" (1998 to 2002)

2. BUDGET HEADING INVOLVED. .

Sub-section B6, heading B6-311 "Promotion of innovation and encouragement of participation of SMEs "

3. LEGAL BASIS. .

Article 130i of the EC Treaty

European Parliament and Council Decision No ... of ... on the Fifth Framework Programme of the European Community for research, technological development and demonstration (1998 to 2002) (OJ No L ..., ..., p. ...).

4. DESCRIPTION OF OPERATION. .

4.1 General objective of the operation

The general aim is to improve the economic and social impact of research and development activities, in particular under the framework programme, by ensuring better dissemination and exploitation of their results, satisfactory participation of SMEs, and the transfer and dissemination of technologies from various sources, taking into account the needs of customers and users.

This aim will be pursued by establishing a coherent innovation policy contributing towards the implementation of the first action plan for innovation, and by paying particular attention to SMEs and their participation in the fifth framework programme. The activities carried out in this programme will complement activities undertaken within Member States. They will support and give direction to activities carried out under other specific programmes or, where appropriate, in the context of other Community activities, in order to achieve this general objective.

4.2 Period covered by the operation. .2.Period covered and arrangements for renewal or extension

1998 to 2002

The arrangements for renewal are provided for in Article 130i of the EC Treaty.

5. CLASSIFICATION OF EXPENDITURE/REVENUE. .

5.1 NCE.

5.2 DA.

5.3 Type of revenue involved:

Certain Associated States will contribute to the financing of the specific programme.

In accordance with Article 27 of the Financial Regulation, certain revenue may be available for re-use.

6. TYPE OF EXPENDITURE/REVENUE. .

The implementation arrangements for the specific programme are as follows:

6.1 Indirect RTD actions and rate of financial participation

The indirect RTD actions will comprise: shared-cost actions, training fellowships, thematic networks, concerted actions and accompanying measures.

The rate of financial participation of the Fifth Framework Programme in these actions is as follows:

Indirect RTD action	Rate of participation:
RTD projects	50% of total eligible costs ^{1,2}
Demonstration projects	35% of total eligible costs ^{1,2}
Combined RTD/demonstration projects	35% to 50% of total eligible costs ^{1,2,3}
Support for access to research infrastructures	Maximum of 100% of additional eligible costs
"Cooperative research" projects	50% of total eligible costs ¹
Exploratory awards	75% of total eligible costs
Training fellowships	Maximum of 100% of additional eligible costs ^{1, 4}
Thematic networks	Maximum of 100% of additional eligible costs
Concerted actions	Maximum of 100% of additional eligible costs
Accompanying measures	Maximum of 100% of total eligible costs

6.2 Pilot activities

Pilot activities will be carried out in the areas indicated in the technical annex to this programme. The financial participation rate for these activities will be the same as for the accompanying measures.

6.3 The arrangements for coordination between research actions within one and the same area consist of identifying common themes or priorities, leading, among other things, to the exchange of information; the performance of jointly agreed work; the examination of the lessons learned from carrying out the work in question; and the reassignment of proposals for indirect RTD actions between specific programmes or between a specific programme and a research and training programme.

-
- ¹ These rates will perhaps have to be adjusted in particular cases to comply with the Community framework on State aid for research and development and Article 8 of the WTO Agreement on subsidies and countervailing measures.
 - ² In the particular case of legal entities which do not keep analytical accounts, the eligible additional costs engendered by the research are financed to the extent of 100%.
 - ³ 35% for the "demonstration" part and 50% for the "RTD" part.
 - ⁴ In the case of industry host fellowships, this amount will normally represent about 50% of the eligible total costs.

7. FINANCIAL IMPACT .

7.1 Method of calculating total cost of operation:

The amount deemed necessary is ECU 350 million for the period from 1998 to 2002.

7.2 Operational expenditure included in Part B of the Budget

Administrative expenditure: ECU 27 million, i.e. 7.7 % of the amount deemed necessary: ECU 350 million.

7.3 Indicative schedule of appropriations

The schedule is established on the basis of the breakdown of the maximum overall amount and the indicative schedule of appropriations for the period 1998-2002 in the proposal for the Fifth Framework Programme.

Commitment appropriations		Payment appropriations				Total.
		1999	2000	2001	2002 and subsequent years	
1999	73.8	20	27.9	12.7	13.2	73.8
2000	87		24.1	14.8	48.1	87
2001	92			23.6	68.4	92
2002	97.2				97.2	97.2
Total	350	20	52	51.1	226.9	350

The final amounts will be laid down by the Budgetary Authority.

8. FRAUD PREVENTION MEASURES.

There is a wide range of administrative and financial checks at all stages of the procedure for concluding and implementing research contracts governing these activities, including the following:

- Prior to conclusion of the contract:
 - Selection of proposals on the basis of the scientific merit of the project and of an assessment as to whether the research costs are in line with the nature of the research, its duration and its potential impact;
 - Analysis of the financial data transmitted by the proposers on their contract negotiation form.
- After the contract has been signed:

- Scrutiny of statements of expenditure prior to payment, carried out at two levels (by the scientific officer and the financial officer);
- Internal audit by the Financial Controller;
- On-the-spot checks enabling the detection of errors or other irregularities through an examination of the supporting documents. In order to make these checks more effective, the Commission's departments have set up an audit unit which coordinates all the checks performed. These checks are either carried out by members of the audit unit or entrusted to auditing companies with which the Commission has concluded contracts, under the supervision of officials from the audit unit;
- On-the-spot inspections by the Commission's Financial Controller and by the European Court of Auditors.

9. ELEMENTS OF COST-EFFECTIVENESS ANALYSIS

9.1 Specific and quantified objectives; target population

This specific programme consists of:

9.1.1 *Coordination activities relating to innovation and SME participation*

- Activities in the field of innovation

This activity will focus on coordinating the innovation units set up for the other programmes, defining methods and mechanisms to help to increase the level of use made of the results of research projects and on the effective dissemination of information on RTD projects and results.

- Activities to increase the participation of SMEs

This activity involves the coordination of activities in support of SME participation in RTD and demonstration activities. It will be based in particular on cooperative research activities and schemes such as "exploratory awards" aimed at supporting SMEs and encouraging them to take part in projects.

9.1.2 *Activities specific to the programme*

- Making better use of the results of Community research:

The aim is to increase the level of use made of the results of research by identifying and promoting the implementation of mechanisms to facilitate, in the life-cycle of projects, the protection of knowledge required, the exploitation or transfer of the results obtained and access to methods of private financing.

- New approaches to technology transfer:

The aim is, in harmony with the activities carried out under the thematic programmes, to develop, validate and implement methodologies in the context of pilot/demonstration technology-transfer projects.

- Studies and good practices:

The aim is to analyse and benchmark innovation performance and policies in a common reference framework and promote exchanges and the application of good practices. This will result, in particular, in the periodical publication of an innovation trend chart.

9.1.3 Encouraging SME participation

- A one-stop entry point:

The aim is to make it easier for SMEs to take part in Community programmes by offering them an additional means of access, a single complementary entry point, common to all the programmes and making use of existing support networks in the Member States.

- Joint support and assistance instruments:

The aim is to simplify and harmonise SME participation conditions (e.g. where contracts are concerned) so as to supplement and strengthen the impact of the one-stop office. There will be specific arrangements for assistance for SMEs and greater use will be made of electronic media (information packages, submission of proposals, help line, etc.).

- Economic intelligence:

The aim is to identify and make available to SMEs relevant information that they need in order to identify their needs and anticipate technological trends.

9.1.4 Joint innovation/SMEs activities

- European network for the promotion of research and innovation:

The aim is, in particular, by making full use of the existing networks (IRCs, CRAFT) to increase firms' receptiveness to technologies capable of helping them to improve their innovation capacity, to encourage transnational transfers of technologies, to promote the dissemination and exploitation of the results of Community research, and to inform and assist potential participants in such research activities.

- Electronic information services and other means of dissemination:

In the context of a joint information service including CORDIS and the extension of the ERGO pilot scheme, this activity will focus on the dissemination of the data needed to publicise more effectively research and innovation activities, the procedures for carrying them out, and their results, and on the provision of information about the socio-economic impact of innovation policies.

- Intellectual property:

The aim is to establish an information system giving access to the various sources of information about patents and other property rights, create a "help line" for participants in Community programmes, protect and make use of Community assets (JRC results), and carry out pilot activities to encourage the use of protection systems.

- Access to private innovation financing:

The aim is to provide SMEs, and in particular SMEs participating in Community research activities, or exploiting the results thereof, with information and advice about the opportunities for access to private innovation-financing instruments, and to promote cooperation between financial resources, researchers and industry.

- Mechanisms to facilitate the setting-up and development of innovative firms:

The aim is, in accordance with the guidelines of the Amsterdam European Council, to analyse, identify and validate, in the context of pilot activities, new approaches to support for the setting-up and development of innovative firms, and for private investment in such firms. Initiatives in cooperation with the EIF, EIB and other financial operators are envisaged in the context of this activity.

9.2 Grounds for the operation

Innovation is a key factor in the competitiveness of European businesses, economic growth and job creation.

Small and medium-sized enterprises are an essential component of the economic and social fabric and they play a vital role in the economy and with regard to employment.

It is therefore important that research activities should be geared more towards innovation, and as a result remedy one of the shortcomings of the European innovation system.

At the same time, by ensuring coordination and providing support, this programme should make an overall contribution to increasing the economic and social impact of the Fifth Framework Programme by ensuring better dissemination and exploitation of the results of research and contributing towards the setting-up and development of innovative firms.

The activities proposed will contribute towards the attainment of the objectives set out in Article 130f of the Treaty. They are also in accordance with objectives of the Framework Programme and the criteria set out in Annex I thereto.

It should also be noted that the "innovation" programme currently being implemented under the Fourth Framework Programme has been the subject of a five-year assessment in line with the SEN 2000 initiative, and that this assessment was taken into account when determining the activities proposed for this programme.

9.3 Monitoring and evaluation of the operation

9.3.1 Monitoring of the projects

Ex-ante evaluation

In order to guarantee the quality of RTD projects, the Commission will evaluate all the proposals received, following calls for proposals, on the basis of the priorities indicated in the specific programmes and the work programmes. For this purpose, it will be assisted, *inter alia*, by independent experts.

Intermediate and final project evaluation:

It is the responsibility of the project coordinator to send the Commission, at regular intervals, the technical and financial progress reports; the detailed final (technical and financial) report covering all the work carried out, setting out the results obtained and the objectives attained and summary reports for publication. These reports will be monitored by the Commission staff, possibly with the assistance of outside experts.

9.3.2 Monitoring and evaluation of the specific programme

Annual monitoring of the implementation of the specific programme:

The Commission will examine each year, with the help of appropriately qualified independent experts, progress with the implementation of the specific programme in the light of the criteria set out in Article 3(2) of the specific programme.

It will assess, in particular, whether the objectives, priorities and financial resources are still appropriate to the changing situation. Where appropriate, it will submit proposals to adapt or supplement the specific programme.

Five-year and/or final evaluation:

In addition, before submitting its proposal for a Sixth Framework Programme, the Commission will have an external assessment conducted by high-level independent experts on the management of, and progress made in, Community activities carried out during the five years preceding the assessment, in particular in the light of the criteria set out in Article 3(2) of the specific programme. The Commission will communicate the conclusions of this assessment, accompanied by its comments, to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions.

Furthermore, in accordance with Article 130p of the Treaty establishing the European Community, the Commission produces an annual report to the European Parliament and the Council on activities relating to research and technological development and the dissemination of results.

10. ADMINISTRATIVE EXPENDITURE (PART A OF SECTION III OF THE COMMISSION BUDGET).

Not applicable.

Proposal for a

COUNCIL DECISION

adopting a specific programme for research,
technological development and demonstration
on "Improving the human research potential and
the socio-economic knowledge base"

(1998 to 2002)

**PROPOSAL FOR A COUNCIL DECISION
adopting a specific programme for research,
technological development and demonstration on "Improving the human research
potential and the socio-economic knowledge base" (1998 to 2002)**

0183 (CNS)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 130i(4) thereof,

Having regard to the proposal from the Commission,¹

Having regard to the opinion of the European Parliament,²

Having regard to the opinion of the Economic and Social Committee,³

Whereas by Decision No .../EC,⁴ the European Parliament and the Council adopted the fifth framework programme of the European Community (hereinafter referred to as the fifth framework programme) for research, technological development and demonstration (hereinafter referred to as RTD) activities for the period 1998 to 2002 specifying *inter alia* the activities to be carried out in the field of improving the human research potential and the socio-economic knowledge base;

Whereas Article 130i(3) of the Treaty stipulates that the framework programme shall be implemented through specific programmes developed within each activity under the framework programme, and that each specific programme shall define the detailed rules for implementing it, fix its duration and provide for the means deemed necessary;

Whereas, in accordance with Article 4(2) of Decision No 1110/94/EC of the European Parliament and of the Council of 26 April 1994 concerning the fourth framework programme of the European Community activities in the field of research, technological development and demonstration (1994 to 1998)⁵ and Article 4(2) of the Council Decisions on the specific programmes implementing the fourth framework programme, the Commission has had an external assessment conducted which it has transmitted to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions together with its conclusions and comments;

¹ OJ No , p.

² OJ No , p.

³ OJ No , p.

⁴ OJ No , p.

⁵ OJ No L 126, 18.5.1994, p. 1. Decision last amended by Decision No 2535/97/EC (OJ L 347, 18.12.1997, p. 1).

Whereas the Scientific and Technical Research Committee has been consulted on the scientific and technological content of the specific programmes, as set out in the working paper adopted by the Commission on 5 November 1997⁶;

Whereas, in accordance with Article 130j of the Treaty, Council Decision .../.../EC⁷ of ... concerning the rules for the participation of undertakings, research centres and universities and for the dissemination of research results (hereinafter referred to as the rules for participation and dissemination) applies to this specific programme and allows the participation of the Joint Research Centre in the indirect actions covered by this specific programme;

Whereas, for the purpose of implementing this programme, in addition to cooperation covered by the Agreement on the European Economic Area or by an association agreement, it may be appropriate to engage in international cooperation activities, on the basis of notably Article 130m of the Treaty, with international organisations and with other third countries;

Whereas implementation of this programme will also comprise activities and mechanisms aimed at stimulating, disseminating and exploiting RTD results, in particular vis-à-vis small and medium-sized enterprises, and activities to stimulate the mobility and training of researchers;

Whereas, in accordance with the objectives of the first action plan for innovation, research activities under the fifth framework programme should be geared more towards innovation;

Whereas the implementation of this programme should be monitored with a view to adapting it, where appropriate, to scientific and technological developments; whereas in due course there should also be an assessment of progress with the programme by independent experts,

⁶ COM(97)553 final of 5.11.1997.

⁷ OJ No ..., ..., p. ...

HAS ADOPTED THIS DECISION*Article 1*

In accordance with Article 3(1) of the fifth framework programme, the specific programme on "Improving the human research potential and the socio-economic knowledge base" (hereinafter referred to as the specific programme) is hereby adopted for the period from [the date of adoption of this programme] to 31 December 2002.

Article 2

1. In accordance with Annex III to the fifth framework programme, the amount deemed necessary for carrying out the specific programme (hereinafter referred to as the amount) is ECU 1402 million, including a maximum of 6,35% for the Commission's administrative expenditure.
2. An indicative breakdown of this amount is given in Annex I.
3. Of this amount
 - ECU 288,5 million is for the period 1998 to 1999, and
 - ECU 1113,5 million is for the period 2000 to 2002.

Where appropriate, the latter figure will be adapted in accordance with Article 3(3) of the fifth framework programme.

4. The budgetary authority shall, in compliance with the scientific and technological objectives and priorities laid down in this Decision, set the appropriations for each financial year taking into account the availability of resources within the multiannual financial perspective.

Article 3

1. The general outlines, the scientific and technological objectives and the priorities for the specific programme are set out in Annex II. They are consistent with the fundamental principles and the three categories of selection criteria indicated in Annex I to the fifth framework programme.
2. In accordance with these principles and criteria the selection criteria indicated in Article 10 of the rules for participation and dissemination shall be applied for the selection of the RTD activities to be carried out.

Selection criteria specific to this programme are given in Annex IV.

All these criteria shall be complied with in the implementation of the programme, including the work programme referred to in Article 5(1), although they may be weighted differently.

3. The rules for participation and dissemination shall apply to the specific programme.
4. Detailed rules for financial participation by the Community in the specific programme are defined in Article 4 of the fifth framework programme.
5. The indirect RTD actions under the specific programme are defined in Annexes II and IV to the fifth framework programme.

Specific rules for implementing the programme are set out in Annex III.

Article 4

In the light of the criteria set out in Article 3, and the scientific and technological objectives and priorities set out in Annex II, the Commission shall:

- (a) monitor the implementation of the specific programme and, where appropriate, submit proposals for adapting it, in accordance with Article 5(1) of the fifth framework programme,
- (b) have the external assessment provided for in Article 5(2) of the fifth framework programme conducted concerning the activities carried out in the fields covered by the specific programme.

Article 5

1. The Commission shall draw up a work programme specifying:
 - (a) the content of Annex II,
 - (b) the indicative timetable for the implementation of the specific programme,
 - (c) the coordination arrangements set out in Annex III,
 - (d) and, where necessary, the selection criteria and the arrangements for applying them for each type of indirect RTD action.

The work programme shall be updated where appropriate.

2. For the purpose of implementing the indirect RTD actions, the Commission shall, on the basis of the work programme, initiate the procedures set out in the rules for participation and dissemination, primarily through calls for proposals.

Article 6

1. The Commission shall be responsible for the implementation of this specific programme.
2. It shall be assisted by a Programme Committee composed of representatives of the Member States and chaired by the representative of the Commission.
3. The representative of the Commission shall submit to the Programme Committee a draft of the measures to be taken concerning:
 - the drawing-up and updating of the work programme referred to in Article 5(1),
 - the drawing-up of the terms of reference for the external assessment provided for in Article 5(2) of the fifth framework programme,
 - any adjustment to the indicative breakdown of the amount as set out in Annex I.

Article 7

1. The Programme Committee shall deliver its opinion on the draft measures referred to in Article 6(3) within a time limit which the Chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148(2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the Committee shall be weighted in the manner set out in that Article. The Chairman shall not vote.

The Commission shall adopt the measures envisaged if they are in accordance with the opinion of the Committee.

If the measures envisaged are not in accordance with the opinion of the Committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a proposal relating to the measures to be taken. The Council shall act by a qualified majority.

If, on expiry of a period of six weeks from the referral of the matter to the Council, the Council has not acted, the proposed measures shall be adopted by the Commission.

2. The Commission shall regularly inform the Programme Committee of progress with the implementation of the specific programme, and shall in particular provide it with information about the results of the evaluation and selection of the indirect RTD actions.

Article 8

This Decision is addressed to the Member States.

Done at Brussels,

For the Council

The President

ANNEX I

INDICATIVE BREAKDOWN OF THE AMOUNT

Type of activity	Total
TOTAL	ECU 1402 million
including the key action: Improving the socio-economic knowledge base	10%

ANNEX II

THE GENERAL OUTLINES, THE SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES AND THE PRIORITIES

INTRODUCTION

The world is increasingly based on knowledge. The Community's prime asset in this area is the quality of its researchers, engineers and technicians. The aim is to preserve and help develop this knowledge potential through greater support for the training and mobility of researchers and by enhancing access to research infrastructures.

The Community also has a solid tradition of research in social and economic science and the humanities, which needs to be mobilised to identify economic and social trends and requirements, both current and future, in order to contribute to the Community's competitiveness and quality of life of its citizens.

General objectives

The general objectives of this programme, to be realised in concert with related activities elsewhere in the Framework Programme, are centred on two main areas of activity, to improve the human research potential and to strengthen the socio-economic knowledge base. To this end, actions will be undertaken :

- to develop the Community's human research potential, making special efforts to ensure equality of access and a better balance between men and women, notably through the training and mobility of researchers so as to contribute, inter alia, to efforts for creating new jobs;
- to enhance access to research infrastructures;
- to help make the Community an attractive location for researchers and to promote European research in the international arena and to promote a European scientific and technological culture;
- to strengthen, through a specific key action, the socio-economic knowledge base for a better understanding of key problems facing European society;
- to help develop scientific and technological policies and other Community policies.

1. ACTIONS SPECIFIC TO THE PROGRAMME

SUPPORTING TRAINING AND MOBILITY OF RESEARCHERS

The individual and collective expertise of the Community's researchers is a considerable asset. However, scientific research takes place in a strongly competitive world-wide environment and compared with our main competitors, the Community has: a relative shortage of researchers; a rather high fragmentation and duplication of research effort; a certain isolation of research teams, particularly in the peripheral and less-favoured regions

of the Community; a relatively low mobility of researchers, both geographically and between academia and industry; a general tendency towards an ageing workforce, which also affects the research field; and underuse of the potential of female scientists.

To address these issues, "*Supporting Training and Mobility of Researchers*" will concentrate on helping to create a European Research Area through the following overall objectives : stimulating training-through-research of young researchers, especially those in the early stages of their professional career; promoting equality of opportunities between women and men in the research field; promoting transnational cooperation between research teams, particularly through networking around a common research project; promoting the mobility of researchers throughout Europe; encouraging cooperation, interactions and staff mobility between academic and industrial research; and promoting the scientific and technological cohesion of the Community, particularly with respect to its less-favoured regions.

This action of the Programme will be implemented through two lines : Research Training Networks and a coherent system of Marie Curie Fellowships. They will be open to all fields of scientific research that contribute to the Community's objectives in research, technological development and demonstration, for projects chosen freely by the participants themselves. In the selection of projects, there will be no pre-established target in terms of scientific discipline or topic - the selection being made on the criteria of scientific excellence and relevance to the objectives of the actions alone (i.e. a bottom-up approach).

- **Research Training Networks**

The primary objective is to promote training-through-research, especially of young researchers at pre-doctoral and at post-doctoral level, within the frame of high quality transnational collaborative research projects, including those in emerging fields of research. Community support will be awarded both to reinforce the research teams of a network through the temporary appointment of young researchers coming from a country other than that of the team concerned and to contribute towards the costs of coordinating the collaborative research project on which the network is based.

Each network will be required to define an appropriate training programme for its young researchers. Its training programme will take advantage of the international nature of the network and, when relevant, the multidisciplinary nature of its joint project, the complementarity of its teams and the network's connections with industry. Research training networks will, in particular, promote the training of researchers in an industrially relevant environment as well as encourage interplay between academic and industrial research. All networks will be required to offer equal opportunities to male and female researchers.

- **System of Marie Curie Fellowships**

This line consists of a coherent system of Marie Curie Fellowships centred on individual fellowships for young high-quality researchers with the necessary research experience, awarded for topics chosen by the researchers themselves. This system is a focused attempt at a more efficient use of Community funding of fellowships for training through research.

The researchers participating are of three categories: (i) postgraduates; (ii) young researchers with the necessary research experience; these are typically researchers with a doctoral degree or at least four years of full-time research experience at post-graduate level other than doctoral studies; (iii) experienced researchers; these are typically researchers with at least ten years of research experience at post-doctoral level and who are established staff members of a research institution. This action will provide equal opportunities for men and women.

Marie Curie Individual Fellowships

The scheme will provide advanced training through research for the best of Europe's young researchers with a view to these fellows becoming Europe's leading researchers. The research institutions will host young researchers with the necessary research experience.

In addition, after completion of a two-year individual fellowship, fellows originating from a less-favoured region and who wish to return to a less-favoured region in their country of nationality may receive a return fellowship.

Marie Curie Industry Host Fellowships

The scheme will provide young researchers with opportunities to carry out research in industrial or commercial environments. The aim is also to stimulate cooperation between industry and academia. The industrial and commercial enterprises will host postgraduates and young researchers with the necessary research experience. The host will be expected to provide adequate research facilities and supervision arrangements for the fellow. There will be special measures for SMEs in order to stimulate the participation of these enterprises in the scheme.

Marie Curie Development Host Fellowships

The scheme will help develop high-level research capacity in research institutions in the less favoured regions of the Community. Research institutions established in less-favoured regions with a need to develop new areas of competence will host young researchers with the necessary research experience. By this means the scientific and technological cohesion of the Community will be enhanced.

Marie Curie Experienced Researchers Fellowships

This scheme will harness the expertise of Europe's experienced researchers for the transfer of knowledge and technology between industry and academia (in both directions) and for similar transfer to the less-favoured regions. The experienced researcher will come from an industrial or commercial enterprise and go to a university or research centre, or vice versa; or will come from or go to a research institution in a less-favoured region.

Stays at Marie Curie Training Sites

The scheme will provide young researchers pursuing their doctoral studies with the possibility to undertake part of them at a Marie Curie training site, and by this means optimising the use of specialist training sites in order to create Community added value. In addition, organisers of international doctoral studies in the framework of a formal collaboration between participating organisations in different countries having the form of certain common requirements for achieving the doctoral degree, are considered possible training sites.

ENHANCING ACCESS TO RESEARCH INFRASTRUCTURES

Access to major research infrastructures is increasingly indispensable for researchers working at the forefront of science. The ability of European research teams to remain competitive with teams elsewhere in the world depends on their being supported by such state-of-the-art infrastructures.

The term "research infrastructures" refers to facilities and establishments that provide essential services to the research community. It covers, for example, singular large-scale research installations, collections, special habitats, libraries, data-bases, integrated arrays of small research installations, as well as infrastructural centres of competence which provide a service for the wider research community based on an assembly of techniques and know-how.

As most of the major research infrastructures in Europe are operated by national authorities principally for the benefit of their national researchers, access to these infrastructures is often restricted largely or even entirely to national research teams. The result is that researchers do not always have the opportunity to access the infrastructures in Europe most appropriate for their work. In addition, some scarce state-of-the-art facilities owned by industrial companies tend to be closed to researchers working outside the company.

Another feature of Europe's research infrastructures is the relatively low level of transnational cooperation that exists between infrastructure operators in many fields. A strong Community added-value would arise if the same culture of cooperation could be created among infrastructure operators as is now beginning to exist between Europe's researchers.

In the context that the construction and operation of infrastructures is the responsibility of national authorities, *"Enhancing Access to Research Infrastructures"* has the following general objectives:

- to sponsor new opportunities for transnational access to major research infrastructures of Community-wide interest;
- to stimulate infrastructure operators and users to work together in order to make more effective use of research infrastructures and hence to improve the service they provide to the scientific community;
- to arrange coordinating, supporting and accompanying actions that ensure consistency with related actions undertaken in other specific programmes.

It will be open to infrastructures in all fields of scientific research that contribute to the Community's objectives in research, technological development and demonstration, to the extent that such measures are not undertaken by other activities of the Framework Programme. It will be implemented primarily through an action to help researchers with Transnational Access to Major Research Infrastructures. In addition, there will be two complementary actions - Infrastructure Cooperation Networks and Research Infrastructure RTD Projects.

- **Transnational Access to Major Research Infrastructures**

The objective is to sponsor new opportunities for research teams (including individual researchers) to obtain access to the major research infrastructures most appropriate for their work, irrespective of where in the Member States or Associated States they or the infrastructure is located.

To be considered for Community support, the infrastructure must provide a world-class service essential for the conduct of top quality research, must be rare in Europe, must have investment or operating costs that are relatively high in relation to those costs in its particular field, and must provide adequate scientific, technical and logistic support to external, particularly first-time, users.

Community support will be awarded to the selected infrastructure operators for them to provide access to their facilities free of charge to transnational users. Each selected infrastructure operator will be expected to publicise widely the opportunities being offered and to arrange for an independent peer-review of proposals submitted to it based on scientific merit, where in addition priority is to be given to first-time users and to users coming from countries where no similar facility exists.

As a general rule, users conducting proprietary research will not be supported under this action. An exception will, however, be made in the case of SMEs who wish to use a particular infrastructure for the first time.

- **Infrastructure Cooperation Networks**

The objective is to catalyse the self-coordination and the pooling of resources between infrastructure operators in order to foster a culture of cooperation between them, to generate critical mass for research into higher performance techniques, instrumentation and technologies, to spread good practice, to promote common protocols and interoperability, to encourage complementarity and to stimulate the creation of "distributed" and "virtual" large facilities.

Community support will be awarded to help coordinate those joint activities that could lead to the more effective use and exploitation of present and future infrastructures relevant to the network. Participants in these networks will be operators of research infrastructures, research teams in universities, in research centres and in industry, representatives of users of the infrastructures, and equipment manufacturers. Each network will be devoted to different aspects of Europe's research infrastructures.

- **Research Infrastructure RTD Projects**

The objective is to support cooperative research efforts that could have widespread significance at a Community level for enhancing access to and improving the service provided by infrastructures in a particular field. Such RTD projects will be particularly encouraged when they are in support of the work of the infrastructure cooperation networks of this Programme or of the precursor concerted actions of the earlier Training and Mobility of Researchers Programme.

PROMOTING SCIENTIFIC AND TECHNOLOGICAL EXCELLENCE

Scientific and technological excellence are essential prerequisites for Europe to succeed in the competitive environment of international research and scientific development. The promotion of excellence would be expected to encourage the best individuals and teams to

become involved in and be committed to European research and to increase the visibility of outstanding research findings produced by European researchers.

At the same time it will be important to improve the image of science and research in society with the objective of creating a favourable environment for research and technological development, and in particular for activities carried out under Community Framework Programmes. Scientific activities and research can only succeed and have the expected beneficial impact if citizens develop a basic understanding of science and scientific issues and come to an overall positive perception of relevant activities and their results.

Where possible, activities will build on and complement national activities.

- **High-level Scientific Conferences**

High-level Scientific Conferences will contribute to the advancement of science through exchange and to create conditions for experienced researchers, working at the cutting edge of scientific and technological development, to impart their knowledge and experience to the younger generation. Scientific Conferences will also create the framework for the networking of Community researchers active outside the Community to build up or preserve their contacts and scientific relations with colleagues in Europe.

Scientific Conferences may be organised as Euro-conferences, -courses, -workshops or -summer schools. They will, as a general rule, be small scale events. Bigger events may be supported with the objective of facilitating the participation of young researchers. Non-traditional forms of scientific conferencing such as electronic conferences will be encouraged. Scientific Conferences will be open to all fields of scientific research on topics freely chosen by the researchers themselves.

- **Distinctions for High-Level Research Work**

These distinctions will give public recognition and visibility to European researchers having successfully completed outstanding transnational projects in fields of research and technological development, in particular those supported under Community Framework Programmes. Distinctions for younger people who have carried out remarkable scientific work whilst being still in the secondary or tertiary educational system will motivate them to continue their efforts in the interest of Europe's scientific and technological future and also encourage other individuals of the same age to take an active interest in science and research.

Distinctions will be foreseen as follows: the "*Descartes Prize*" for outstanding scientific and technological achievements resulting from European cooperation, in particular from cooperative projects supported under Community Framework Programmes; an Award to undergraduate students of higher education institutions in Europe having developed original scientific ideas or concepts in areas which are relevant to the advancement of European science; the *European Union Contest for Young Scientists*, catering for scientific talents in the age range 15 to 20 years, to be organised in conjunction with the appropriate "public awareness" activities.

- **Raising Public Awareness**

The main objective will be to raise public awareness for scientific activities and technological developments, in particular those undertaken in European research programmes, and thereby bridge the gap between science in its European dimension and the public. This should help European citizens to better understand both the beneficial impact of science and technology on their day-to-day lives as well as limitations and possible implications of research and technological developments. The activity will also aim to increase scientists' awareness of issues and subjects that are of concern to the public.

Community support will be provided: to promote European networking and the exchange of best practice between successful projects and initiatives at national or regional level; to arrange for regular encounters between scientists and science communicators; to promote the participation of women in science; to support the organisation of a *European Science and Technology Week* as a showcase for the concerted and coordinated display of European efforts in science and research; to provide via electronic networks and other appropriate means information on topical scientific and technological subjects in a language that is understandable to the scientifically interested but non-specialist citizen.

KEY ACTION : IMPROVING THE SOCIO-ECONOMIC KNOWLEDGE BASE

The European Union draws its strength both from the social and cultural diversities between its members as well as from the similarities of their experiences and common values. The Community also has a solid tradition of research in social and economic science and the humanities, which need to be mobilised to identify economic and social trends and requirements, both current and future, in order to contribute to the Community's competitiveness and quality of life of its citizens.

In a period of increasing challenges, such as unacceptable levels of unemployment, an increase in inequalities, and a declining relative contribution to the world economy, European society will have to undergo changes towards achieving sustainable socio-economic development, the improvement of the quality of life of all its citizens and to maintain and enhance Europe's competitive position in the world. Social sciences must therefore be in a position to respond to these challenges, overcome national boundaries, reinforce their cooperation and enhance their analytical capacity. Furthermore the process of European integration itself has given rise to a new object of study - European society - which is different from the sum of its components, although clearly dependent on them.

The objective of this key action will be to improve our understanding of the structural changes taking place in the European society in order to identify ways of managing change and to involve European citizens more actively in shaping their own futures. This will involve the analysis of the main trends giving rise to these changes, the analysis of the relationships between technology, employment and society, the re-appraisal of participation mechanisms for collective action at all levels of governance and the elaboration of new development strategies fostering growth employment and economic and social cohesion.

This key action covers a number of subjects linked to the general objectives of the Framework Programme and aims at defining the base for employment-generating social, economic and cultural development and for building a European knowledge society. These subjects should not be seen in isolation, but as interrelated parts of a coherent and comprehensive framework.

Support will aim at developing a conceptual understanding of the processes described above, built upon empirical, comparative and prospective research, including constructing and integrating data and indicator systems and establishing a common research infrastructure. These activities will therefore contribute to provide the policy decision-making process with a sound knowledge of the challenges facing Europe, of their main consequences and of possible policy options to tackle them.

Societal Trends and Structural Changes

Against a background of profound structural, demographic and social changes, research within this theme will aim at elucidating the complex interactions between societal trends, life chances, economic changes, labour market institutions and cultural patterns, taking into account European regional diversities. The analysis will include the phenomena of

xenophobia, racism and migration. Attention will be accorded on the impact on economic development, social integration and social protection.

The study of these interactions will provide a better understanding of the changing patterns of work and organisation of time, of the use of new types of atypical and part-time or temporary jobs, of the capacity of education and training to prepare individuals over their lifetime to a changing environment and to enhance knowledge and of the gender issue in European society. Research work will provide a sound knowledge base and contribute to the formulation and development of the relevant European policies.

Technology, Society and Employment

Research under this theme aims to understand better the relationship of interdependency and embedness between technology and society. While the need for integrating social, institutional and environmental concerns in the technological development process is now accepted, the possible options vary according to different kinds of technologies, the state of their development and diffusion in society. Research will be undertaken on methods of interaction between the various actors concerned - suppliers, users, advisory bodies, decision makers and public authorities. An improved understanding of the deployment and the impact of technologies in various socio-economic, territorial, institutional, political and cultural contexts in the Union is expected to arise from this work. Research will also examine the role of the public sector in the innovation process and how authorities interact with other partners.

Attention will be paid to the relationships between technology and employment, in particular the new information and communications technologies and the new ways of organising production and labour, including newly emerging professions, the geographical location of employment, changes in the working conditions and in the workforce skills. The role of innovation in education and training, the concept of life long learning, as well as how education and training can stimulate innovation, promote employment, social integration and equal opportunities, will also be examined.

Governance and Citizenship

In the context of European integration, there is a need to re-assess the role of the different levels of governance in Europe (local, regional, national and supranational). The aim will be to analyse the mutual articulation of responsibility and accountability at all levels and their real capacity as agents of change, whilst allowing for the development of mechanisms of dialogue, deliberation and decision-making to ensure effective cooperation between all the actors concerned.

Research will set out to explain to what extent the various types of economic and social regulation in Europe are the consequences of a specific socio-institutional and cultural construction, in order to define better European integration strategies. It will address both regulation by public authorities as well as civil initiatives and structures such as political parties, public interest groups and social partners. The examination of the role of public authorities will also cover the re-assessment of their missions, and of the concept of public service and the notion of public interest. In this framework, the analysis of the evolution of welfare systems will be a key element.

The analyses will be accompanied by the study of the concept of citizenship across Europe, and of types and systems of regulation to which they give rise. Research will also analyse the influence of the various components of culture (traditions, language, history,

heritage, religions, migrations) and of educational models on the development of values. Analysis at the level of the individual could complement, where appropriate, research in this area. The role of media in a global economy, in which international audiovisual cultural products are increasingly present, will also be examined.

New development models fostering growth and employment

This prospective work will seek to explore new sustainable development models to foster growth, job creation, equal opportunities, the reduction of inequalities and the improvement of quality of life. It will investigate the dynamics of creation and distribution of wealth, in a globalised economy where "intangible" and service factors predominate. This will involve the development of indicators and methodologies for assessing the social and economic added value of the various production models, identifying competitiveness factors including human capital, and characterising the different policies best adapted to the European economic area, taking into account Europe's regional divergencies, and to the evolution of Europe in the world economic relations.

Research will concentrate on analyses of issues such as organisational innovations, new types of work and employment, the responses to the increasing demand for services, the development of non-profit mutual supporting activities, and innovations in socio-economic partners cooperation. Socio-economic and demographic differences across Europe and the impact of the development models on economic and social cohesion will be included in the analysis.

SUPPORT FOR THE DEVELOPMENT OF SCIENTIFIC AND TECHNOLOGY POLICIES IN EUROPE

To fulfil the tasks conferred on it by the Treaty in the field of research and innovation, the European Union needs to increase its ability to anticipate the issues at stake for Europe in the field of science and technology by exploiting the resources available to it in this area more effectively.

A considerable amount of research work and studies are carried out and indicators produced ahead of the framing of science and technology policy at national and European level. The inadequate interaction between very diverse national approaches, and the complexity and often transnational dimension of the issues addressed by the work in question call for networking and the collation and coordinated exploitation of results at European level in order to shed light on certain major issues in good time.

In order to support the development of the specific base of knowledge about scientific and technology policy issues which is needed by both national and European decision-makers and other users, these activities provide a flexible, strategic intelligence-gathering, collating and evaluation service. By underpinning and complementing the activities carried out at national and international level, the activities are intended to promote the exchange of information and experience between decision-makers and researchers and enable knowledge to be put to better use.

- **Strategic analysis of specific political issues**

This activity involves the provision of support for the analytical and collating work to be carried out on a limited number of specific issues relating to scientific and technology

policy. This work will be carried out by groups of experts from specialised national and international organisations and include studies, seminars and conferences. The matters to be dealt with will be identified by decision-makers and other players concerned with science and technology policies in the following fields:

- matters relating to the implications, for science and technology policies, of the challenges posed by scientific and technological change, globalisation, changes in social demands, the new forms of competition and cooperation between businesses, and job-creation and growth in a manner that is environmentally sound and contributes to social cohesion;

- matters relating to how the objectives and priorities of these policies and the instruments used to implement them enable them to be tackled and analysis of their socio-economic impact.

The JRC's Institute for Prospective Technological Studies will be closely involved in the preparation of the options and recommendations in which this work should culminate, through its technology assessment, technology watch and technology foresight work.

- **Common basis of science, technology and innovation indicators**

The design, coordination and assessment of RTD strategies in Europe require the availability of relevant and comparable indicators at different levels (national, regional, European, world), including indicators measuring progress towards sustainable development. This second type of activities, carried out in conjunction with the Statistical Office and the relevant Commission Services and in cooperation with the specialist institutes in Europe, should gradually establish a common European base of science, technology and innovation indicators. It will be a question of coordinating and funding the work needed in order to compile appropriate statistics and new indicators covering the Union and the main third countries; it will in this way be possible to make available to the authorities concerned in the Member States, the European and national parliamentary assessment offices, and the Commission Services and all interested parties, a coherent set of data sent electronically and accompanied by the services needed for their processing, analysis and proper use.

2. INTERACTION WITH RELATED ACTIONS IN THE OTHER FRAMEWORK PROGRAMME ACTIVITIES

A major feature of this programme will consist of the coordination and support of relevant activities throughout the Framework Programme, concerning, in particular, researcher's training, support for research infrastructures and the overall socio-economic dimension of Community research. More specifically:

- for the *Marie Curie Fellowships*: these could also be implemented by the thematic programmes. In order to ensure consistency, common rules will be defined concerning eligibility, implementation modalities, legal and financial provisions, and a single entry point for the reception of proposals will be set up.
- for *major research infrastructures*: consistency and complementarity of approach will be ensured with the relevant actions of the other specific programmes.
- for *socio-economic research*: coordination will be achieved through participation in the elaboration of the work programmes, support in the creation of appropriate evaluation mechanisms and collection and dissemination of relevant information, in order to ensure that the socio-economic dimension is consistently taken into account in the specific programmes.
- for the activities in *support of the development of science and technology policies in Europe* : consistency and complementarity with the actions of the other specific programmes will be ensured through coordination, the use of harmonised instruments (e.g. policy-oriented thematic networks and expert panels) and a common approach for the dissemination of results (e.g. publications, seminars and conferences).

ANNEX III

SPECIFIC RULES FOR IMPLEMENTING THE PROGRAMME

The specific programme is implemented by means of the indirect RTD actions described in Annexes II and IV of the fifth framework programme. Furthermore, the following specific rules for the programme apply:

1. SPECIAL CONDITIONS

SUPPORTING TRAINING AND MOBILITY OF RESEARCHERS

- **Research Training Networks**

A research training network will normally consist of at least five non-affiliated legal entities from at least three Member States or Associated States.

Community funding will cover up to 100% of the additional eligible costs connected with the temporary appointment of young researchers, both pre-doctoral and post-doctoral, and with coordinating the joint project on which the network is based. The maximum funding for a network as a whole will correspond to the cost of taking on a young researcher in each of its partners as well as making a contribution to the costs of coordinating the project. At least 60% of the funding for each network will be attributed to the costs of appointing young researchers.

Community support will normally not be granted to procure durable equipment nor to finance the research work itself.

- **System of Marie Curie Fellowships**

Researchers eligible to participate in the system of Marie Curie Fellowships are of three categories, as defined in Annex II of this programme. They must be nationals or residents of a Member State or Associated State. Only legal persons established in a Member State or Associated State are eligible to participate as host institutions. The research will be undertaken in a country other than that of the fellow's nationality and recent centre of activity, except for individual return fellowships and for experienced researchers fellowships. For experienced researchers fellowships, in particular, the research will be undertaken in a country other than the one in which the experienced researcher is a staff member of a research institution.

Marie Curie Individual Fellowships

The application for an individual fellowship will be made by the fellow in conjunction with the host institution. The fellows will be selected by the Commission on the basis of the criteria stipulated in Annex IV of the present programme.

The fellowships will be paid to the host institution in accordance to Annex IV of the fifth framework programme. The amount of the allowance for the fellow will be established for each Member State and Associated State taking into account both the high standard of the Marie Curie fellows and the overall situation of researchers of a corresponding level in the host country; it will include a provision for proper social security expenses.

Each host must ensure that the fellow is covered under the social security scheme which is applied to employed workers within the Member State or Associated State concerned, or under a social security scheme providing a protection which is at least comparable, in terms of level and scope.

Marie Curie Industry Host Fellowships

The host institutions will be selected by the Commission on the basis of the criteria stipulated in Annex IV of the present programme. The fellows will subsequently be selected by the host institution. The Commission will establish detailed criteria, concerning notably qualification and equal access opportunities to be followed by the industry host in the selection of fellows. Before a fellowship contract is offered, the selected fellows will have to be confirmed by the Commission.

A joint funding from the Community and the host institution will enable the host institution to finance postgraduates and young researchers with the necessary research experience.

Marie Curie Development Host Fellowships

The host institutions will be selected by the Commission on the basis of the criteria stipulated in Annex IV of the present programme. The fellows will subsequently be selected by the host institution. The Commission will establish detailed criteria, concerning notably qualification and equal access opportunities to be followed by the host in the selection of fellows. Before a fellowship contract is offered, the selected fellows will have to be confirmed by the Commission.

Community funding will enable the host institution to finance young researchers with the necessary research experience.

Marie Curie Experienced Researchers Fellowships

The application for an experienced researcher fellowship will be made by the fellow in conjunction with the host institution. The experienced researchers will be selected by the Commission on the basis of the criteria stipulated in Annex IV of the present programme.

Community funding will enable the host institution to finance an experienced researcher.

Stays at Marie Curie Training Sites

A training site is a clearly identifiable part of a research organisation, such as a research group or interrelated research groups. The training site must be internationally recognised within its respective field and have proven experience of international doctoral training. In addition, organisers of international doctoral studies, in the framework of a formal collaboration between participating organisations in different countries having the form of certain common requirements for achieving the doctoral degree, are considered possible training sites.

The training sites will be selected by the Commission on the basis of the criteria stipulated in Annex IV of the present programme. The young researchers will subsequently be selected by the training site. The Commission will establish detailed criteria, concerning notably qualification and equal access opportunities to be followed by the training site in the selection of fellows. Before a fellowship contract is offered, the selected fellows will have to be confirmed by the Commission.

The young researchers must be pursuing doctoral studies in a country other than that of the host institution in a subject area similar to that of the training site. They must undertake the period of training at the training site as an integral part of their doctoral studies.

Community funding will enable the training site to finance short stays for the young researchers of a maximum duration of an academic year.

ENHANCING ACCESS TO RESEARCH INFRASTRUCTURES

- **Transnational Access to Major Research Infrastructures**

Participants in this line will be legal entities which operate major research infrastructure. Financial support to international organisations operating major research infrastructure in the Member States or Associated States will be provided only for those services that are complementary to the mission of the organisation concerned.

Community funding is intended to cover 100% of the travel and subsistence costs of visits to the infrastructure by teams of researchers working in Member States and Associated States other than the state where the owner and operator of the facility is located. However, only researchers within these teams of researchers who are either nationals of or residents in the Member States and the Associated States will have their travel and subsistence costs reimbursed. Community funding will also cover up to 100% of the additional eligible costs of providing teams of researchers with access to the infrastructure; such costs will be calculated either on the basis of a unit user fee to be negotiated with each infrastructure operator and to be derived from its direct operating costs, or on the basis of the actual additional costs connected with

making the facility available to the visiting teams of researchers. Eligible costs will exclude all contributions to capital costs.

- **Infrastructure Cooperation Networks**

Infrastructure cooperation networks will be implemented as thematic networks. Each network will contain at least three non-affiliated legal entities which operate research infrastructure from at least three different countries of the Member States and Associated States and will be co-ordinated by a legal entity which operates a research infrastructure.

- **Research Infrastructure RTD Projects**

RTD projects will contain at least two non-affiliated legal entities which operate research infrastructure in at least two countries of the Member States and Associated States. The project will be coordinated by a legal entity which operates a research infrastructure.

- **Concerted Actions**

The Commission may initiate, in conjunction with legal entities which operate research infrastructure and are contractors under this Programme (or under the earlier Training and Mobility of Researchers Programme), concerted actions, to encourage the exchange of information between infrastructure operators and researchers from Member States or Associated States on subjects of common interest, complementing national and international efforts.

PROMOTING SCIENTIFIC AND TECHNOLOGICAL EXCELLENCE

- **High-level Scientific Conferences**

Participants in this line will be legal entities from all fields of scientific endeavour who wish to organise a scientific conference, involving researchers from a cross-section of the respective scientific community.

Community funding is intended to contribute to organisational costs, to the participation of speakers or teaching staff and to cover up to 100% of expenses related to the participation of young researchers in the selected event. Support will also be made available to facilitate the participation of researchers who are nationals of one of the Member States and Associated States and who at the time of the event are active in laboratories or institutions outside Member States or Associated States.

- **Distinctions for High-level Research Work**

Participants in the "*Descartes Prize*" will be legal entities who have obtained outstanding scientific and technological achievements resulting from European cooperation, in particular from cooperative projects supported under Community framework programmes

Participants in the Award for undergraduate students of higher education institutions and in the *European Union Contest for Young Scientists* will be legal entities.

Young people may participate on an individual basis provided that projects have been preselected under the respective national schemes.

Community funding will cover up to 100% of costs related to the preparation and organisation of appropriate selection procedures, including the awarding of monetary prizes or equivalent recognition to the most deserving participants.

2. ACCOMPANYING MEASURES

Accompanying measures will primarily consist of :

- studies in support of this programme and in preparation for future activities, including on strategic issues arising in the course of the programme;
- exchanges of information, conferences, seminars, workshops, round tables, study panels or other scientific or technical meetings;
- use of external expertise for, inter alia, the purposes of the monitoring of the specific programme as foreseen in Article 5, paragraph 1 of the Fifth Framework Programme, the external assessment of the actions foreseen in Article 5, paragraph 2 of the Fifth Framework Programme, the evaluation of proposed indirect RTD actions, or the monitoring of their implementation;
- information, communication and dissemination activities, including scientific publications and activities for the promotion and exploitation of results and the transfer of technology;
- the promotion of the identity and prestige of Marie Curie fellows, especially through the Marie Curie Fellowship Association;
- support in order to bring together potential participants for the purpose of elaborating a detailed work plan for a research proposal, in particular as a means of stimulating proposals in newly emerging fields of science and technology or in novel transdisciplinary approaches, or in fields where there is little history of transnational cooperation;
- support for awareness-raising activities and assisting research players, including SMEs.

3. COORDINATION ARRANGEMENTS

The Commission will endeavour to ensure complementarity between the indirect RTD actions within the programme, in particular by grouping them around a common objective, and to avoid duplication, while respecting the legitimate interests of proposers of indirect RTD actions.

Coordination will also be ensured between actions under the specific programme and those carried out in:

- other specific programmes implementing the fifth framework programme,

- the research and training programmes implementing Council Decision .../.../Euratom of ... concerning the fifth framework programme of the European Atomic Energy Community (Euratom) for research and training activities (1998-2002),⁸
- other European research frameworks such as Eureka and COST,
- other Community research-related instruments such as PHARE, TACIS, MEDA, the EIF, the Structural Funds, the EIB and programmes in the field of education, training and youth.

It will comprise:

- (i) the identification of common themes or priorities, resulting in particular in:
 - the exchange of information,
 - the carrying out of work decided upon jointly, entailing in particular the joint initiation of one of the procedures referred to in Article 9 of the rules for participation and dissemination,
- (ii) the reassignment of proposals for indirect RTD actions between specific programmes or between a specific programme and a research and training programme.

⁸ OJ No L

ANNEX IV

SELECTION CRITERIA FOR THE IMPLEMENTATION OF THE PROGRAMME

The specific selection criteria for certain parts of this programme, which supplement those referred to in Article 3, are the following:

SUPPORTING THE TRAINING AND MOBILITY OF RESEARCHERS

- **Research Training Networks**

Networks will be selected on the basis of the scientific merit of the collaborative research project on which the network is based and the quality and content of the network's training programme. Networks promoting interactions between different disciplines and those containing complementary teams as well as those involving meaningful connections with industry will be preferred over networks of otherwise equal merit, where these features are exploited in the network's training programme.

- **System of Marie Curie Fellowships**

Marie Curie Individual Fellowships

The selection criteria will include the research experience and the aptitude of the candidate, the impact and benefit of the training for the candidate, the research quality of the hosting research group, the ability of the host to meet the specific research training needs of the candidate, and the scientific and technological quality and relevance of the project.

For return fellowships, the selection criteria will include the results and research experience gained by the candidate during the initial fellowship, and the benefit to the new hosting research group.

Marie Curie Industry Host Fellowships

The host institutions will be selected by the Commission. The fellows will subsequently be selected by the host institution. The Commission will establish detailed criteria, concerning notably qualification and equal access opportunities, to be followed by the industry host in the selection of fellows. Before a fellowship contract is offered, the selected fellows will have to be confirmed by the Commission.

The selection criteria will include the research quality of the host, the ability to provide adequate training, supervision arrangements and research facilities for the fellow, collaborative arrangements with other research organisations, and the scientific and technological quality and relevance of the proposed research area.

The fellows will be selected by the host on the basis of their scientific ability and on the compatibility of their research experience with the proposed research area.

Marie Curie Development Host Fellowships

The host institutions will be selected by the Commission. The fellows will subsequently be selected by the host institution. The Commission will establish detailed criteria, concerning notably qualification and equal access opportunities to be followed by the development host in the selection of fellows. Before a fellowship contract is offered, the selected fellows will have to be confirmed by the Commission.

The selection criteria will include the relevance and impact of the competence which is sought, the compatibility of the new competence with the existing competence of the host, the appropriate size of the hosting research group in order to allow adequate working conditions for the fellows, and the international nature of the research activities of the hosting research group.

The fellows will be selected by the host on the basis of their scientific ability and on the compatibility of their research experience with the needs of the host.

Marie Curie Experienced Researchers Fellowships

The selection criteria will include the scientific excellence of the candidate, the scientific and technological quality and relevance of the project, and the relevance, impact and benefit of the fellowship for the parties involved.

Stays at Marie Curie Training Sites

The training sites will be selected by the Commission. The young researchers will subsequently be selected by the training site. The Commission will establish detailed criteria, concerning notably qualification and equal access opportunities to be followed by the training site in the selection of fellows. Before a fellowship contract is offered, the selected fellows will have to be confirmed by the Commission.

The selection criteria will include the research quality of the training site, the ability of the training site to provide research training, the evidence of past successful international doctoral training, and the appropriate size of the training site in order to allow adequate working conditions for the young researchers.

The young researchers will be selected by the training site on the basis of their scientific ability and on the suitability of the training site for their particular doctoral studies.

ENHANCING ACCESS TO RESEARCH INFRASTRUCTURES

• Transnational Access to Major Research Infrastructures

The criteria for selecting infrastructure to be supported will be the quality of the infrastructure, the quality of the research that external users are able to conduct there, the quality of the scientific, technical and logistic support provided for these external users, the scale of interest being demonstrated by new transnational users coming from countries where no similar infrastructure exists, and the cost-effectiveness of Community support.

- **Infrastructure Cooperation Networks**

Networks will be selected on the basis of their potential to enhance the access to and the service provided by research infrastructures that have a Community-wide interest and on the basis of the ability of the participants to provide an effective coordination of the network's activities.

- **Research Infrastructure RTD Projects**

RTD projects will be selected on the basis of the scientific originality of the project, the quality of its research method and work plan, the potential of the project to improve infrastructure provision in Europe, and the degree of interest shown generally by infrastructure operators in the field and by the user community.

PROMOTING SCIENTIFIC AND TECHNOLOGICAL EXCELLENCE

- **High-level Scientific Conferences**

The criteria for the selection of scientific meetings to be supported will be the interest of the proposed topic for a wider scientific community, the quality of the proposed conference programme and its relevance for the training of the younger generation of European researchers.

- **Distinctions for High-level Research Work**

Distinctions will be awarded on the basis of the scientific quality and the relevance of presented projects. Age and scientific background of participants will duly be taken into consideration.

- **Raising Public Awareness**

To qualify for Community support projects need to address an issue of broader European interest and involve high quality interaction between scientists and science communicators for the benefit of European citizens. Preference will be given to projects and initiatives involving at least three non-affiliated partners from at least three different Member States or Associated States. Other projects may qualify for support if they promise to produce transferable results that could be used by actors not involved in the respective project.

FINANCIAL STATEMENT

1. TITLE OF THE OPERATION

Proposal for a Council Decision adopting a specific programme for research, technological development and demonstration on "Improving the human research potential and the socio-economic knowledge base" (1998 to 2002)

2. BUDGET HEADING INVOLVED .

Sub-section B6, heading B6-6411 "Increasing the human potential"

3. LEGAL BASIS .

Article 130i of the EC Treaty

European Parliament and Council Decision No ... of ... on the Fifth Framework Programme of the European Community for research, technological development and demonstration (1998-2002) (OJ No L ..., ..., p. ...).

4. DESCRIPTION OF OPERATION.

4.1 General objective.

The general objectives of this programme, to be realised in concert with related activities elsewhere in the framework programme, are centred on two main areas of activity, namely improving the human research potential and strengthening the socio-economic knowledge base. To this end, actions will be undertaken :

- to develop the Community's human research potential;
- to enhance access to research infrastructures;
- to help make the Community an attractive location for researchers and to promote European research in the international arena and a European scientific and technological culture;
- to strengthen, through a specific key action, the socio-economic knowledge base for a better understanding of key problems facing European society;
- to help develop scientific and technological policies and other Community policies.

4.2 Period covered and arrangements for renewal or extension.

1998 to 2002

The arrangements for renewal of the operation are provided for in Article 130i of the EC Treaty.

5. CLASSIFICATION OF EXPENDITURE OR REVENUE.**5.1 NCE.****5.2 DA.****5.3 Type of revenue involved.:**

Certain Associated States will contribute to the financing of the specific programme.

In accordance with Article 27 of the Financial Regulation, certain revenue may be available for re-use.

6. TYPE OF EXPENDITURE OR REVENUE.

The implementation arrangements for the specific programme are as follows:

6.1 Indirect RTD actions and rate of financial participation

The indirect RTD actions will comprise: shared-cost actions, "Marie Curie" fellowships, thematic and research training networks, concerted actions and accompanying measures.

The rate of financial participation of the fifth framework programme in these actions is as follows:

Indirect RTD action	Rate of participation:
RTD projects	50% of total eligible costs ^{1,2}
Demonstration projects	35% to 50% of total eligible costs ^{1,2}
Combined RTD/demonstration projects	35% to 50% of total eligible costs ^{1,2,3}
Support for access to research infrastructures	Maximum of 100% of additional eligible costs
"Cooperative research" projects	50% of total eligible costs ¹
Exploratory awards	75% of total eligible costs
Training grants	Maximum of 100% of additional eligible costs ^{1,4}
Research training networks	Maximum of 100% of additional eligible costs
Concerted actions	Maximum of 100% of additional eligible costs
Accompanying measures	Maximum of 100% of total eligible costs

6.2 The coordination arrangements for research actions within the same area consist of identifying common themes or priorities, leading, *inter alia*, to the exchange of information, the performance of jointly agreed work and/or the reassignment of indirect RTD actions between specific programmes or between a specific programme and a research and teaching programme.

7. FINANCIAL IMPACT.

7.1 Method of calculating total cost of operation

The estimated amount required is ECU 1 402 million for the period from 1998 to 2002.

-
- ¹ These rates will perhaps have to be adjusted in particular cases to comply with the Community framework on State aid for research and development and Article 8 of the WTO Agreement on subsidies and countervailing measures.
- ² In the particular case of legal bodies which do not keep analytical accounts, the eligible additional costs engendered by the research are financed 100%.
- ³ 35% for the "demonstration" part and 50% for the "RTD" part.
- ⁴ In the case of Industry Host Fellowships, this amount will normally represent about 50% of the eligible total costs.

7.2 Itemised breakdown of cost

Type of activity	Total
TOTAL	ECU 1 402 million
Including the key action: Improving the socio-economic knowledge base	10%

7.3 Operational expenditure included in Part B of the Budget

Administrative expenditure: ECU 89 million, or 6.35 % of the estimated amount required: ECU 1 402 million.

7.4 Indicative schedule of appropriations

The schedule is established on the basis of the breakdown of the maximum overall amount and the indicative schedule of appropriations for the period 1998-2002 for the proposal for the 5th framework programme.

Commitment appropriations		Payment appropriations				Total.
		1999	2000	2001	2002 and subsequent years	
1999	288.5	80	116	87	5.5	288.5
2000	343		119.6	103	120.4	343
2001	261.1			60	201.1	261.1
2002	509.4				509.4	509.4
Total	1 402	80	235.6	250	836.4	1 402

The final amounts will be laid down by the Budgetary Authority.

8. FRAUD PREVENTION MEASURES .

There is a wide range of administrative and financial checks at all stages of the procedure for awarding and executing research contracts, including the following:

- Prior to conclusion of the contract:
 - Selection of proposals on the basis of the scientific value of the project and of an assessment as to whether the research costs are realistic in relation to the nature of the research, its duration and its potential impact;
 - Analysis of the financial data transmitted by the proposers on their contract negotiation form.

- After the contract has been signed:
 - Scrutiny of statements of expenditure prior to payment, carried out at two levels (by the scientific officer and the financial officer);
 - On-the-spot checks enabling the detection of errors or other irregularities through an examination of the supporting documents. In order to make these checks more effective, the Commission's departments have set up an audit unit which coordinates the results of all the checks performed. These checks are either carried out by members of the audit unit or entrusted to auditing companies with which the Commission has concluded contracts, under the supervision of officials from the audit unit;
 - Internal audit by the Financial Controller;
 - Unannounced inspections by the Commission's Financial Controller and by the Court of Auditors of the European Union.

9. ELEMENTS OF COST-EFFECTIVENESS ANALYSIS

9.1 Specific and quantified objectives; target population

This specific programme consists of:

9.1.1 Specific activities of the programme

- Supporting training and mobility of researchers

This activity will concentrate on helping to create a European Research Area through the following objectives : stimulating training-through-research of young researchers; promoting equality of opportunities for women and men in the research field; promoting transnational cooperation between research teams; promoting the mobility of researchers throughout Europe; encouraging cooperation, interactions and staff mobility between academic and industrial research; and promoting the scientific and technological cohesion of the Community, particularly with respect to its less-favoured regions.

This action of the programme will be implemented through two lines:

- Research Training Networks
- A system of Marie Curie Fellowships
- Enhancing access to research infrastructures

Given that the construction and operation of infrastructures is the responsibility of national authorities, "*Enhancing Access to Research Infrastructures*" has the following general objectives:

- * to sponsor new opportunities for transnational access to major research infrastructures of Community-wide interest;
- * to stimulate infrastructure operators and users to work together in order to make more effective use of research infrastructures and hence to improve the service they provide to the scientific community;
- * to arrange coordinating, supporting and accompanying actions that ensure consistency with related actions undertaken in other specific programmes.

This action will be open to infrastructures in all fields of scientific research that contribute to the Community's objectives in research, technological development and demonstration, provided such measures are not undertaken under other activities of the framework programme. It will be implemented primarily through an action to help researchers with transnational access to major research infrastructures. In addition, there will be two complementary actions - Infrastructure Cooperation Networks and Research Infrastructure RTD Projects.

◇ Transnational Access to Major Research Infrastructures

The objective is to sponsor new opportunities for research teams (including individual researchers) to obtain access to the major research infrastructures most appropriate for their work, irrespective of where in the Member States or Associated States the teams or infrastructures are located.

◇ Infrastructure Cooperation Networks

The objective is to catalyse self-coordination and the pooling of resources between infrastructure operators to foster a culture of cooperation between them, to generate critical mass for research into higher performance techniques, instrumentation and technologies, to spread good practice, to promote common protocols and interoperability, to encourage complementarity and to stimulate the creation of "distributed" and "virtual" large facilities.

◇ Research Infrastructure RTD Projects

The objective is to support cooperative research efforts that could have widespread significance at a Community level for enhancing access to and improving the service provided by infrastructures in a particular field.

- Promoting scientific and technological excellence

The promotion of excellence would be expected to encourage the best individuals and teams to become involved in and be committed to European

research and to increase the visibility of outstanding research findings produced by European researchers.

At the same time it will be important to improve the image of science and research in society with the objective of creating a favourable environment for research and technological development, and in particular for activities carried out under Community framework programmes.

Where possible, activities will build on and complement national activities.

◇ High-level Scientific Conferences

High-level Scientific Conferences will contribute to the advancement of science through exchange and to the creation of conditions for experienced researchers working at the cutting edge of scientific and technological development to impart their knowledge and experience to the younger generation. Scientific Conferences will also create the framework for the networking of Community researchers active outside the Community to build up or preserve their contacts and scientific relations with colleagues in Europe.

◇ Distinctions for High-Level Research Work

These distinctions will give public recognition and visibility to European researchers having successfully completed outstanding transnational projects in fields of research and technological development, in particular those supported under Community framework programmes.

◇ Raising Public Awareness

The main objective of this line of action will be to further raise public awareness for scientific activities and technological developments, in particular those undertaken in European research programmes, and thereby to bridge the gap between science in its European dimension and the public.

• KEY ACTION: IMPROVING THE SOCIO-ECONOMIC KNOWLEDGE BASE

The objective of this key action will be to improve our understanding of the structural changes taking place in European society in order to identify ways of managing change and involve European citizens more actively in shaping their own futures. This will involve the analysis of the main trends giving rise to these changes, the analysis of the relationships between technology, employment and society, the re-appraisal of participation mechanisms for collective action at all levels of governance and the elaboration of new development strategies fostering growth employment and economic and social cohesion.

This key action covers a number of subjects linked to the general objectives of the framework programme:

◇ Societal trends and structural changes

The research in this field will aim at elucidating the complex interactions between societal trends, life chances, economic changes, labour market institutions and cultural patterns, taking into account European regional diversities. The analysis will include the phenomena of xenophobia, racism and migration. Attention will be attached to the impact on economic development, social integration and social protection.

◇ Technology, Society and Employment

Research under this theme is aimed at providing a better understanding of the relationship of interdependence and integration between technology and society.

◇ Governance and Citizenship

The aim will be to analyse the interaction between responsibility and accountability at all levels and their real capacity as agents of change, whilst allowing for the development of mechanisms of dialogue, deliberation and decision-making to ensure effective cooperation between all the actors concerned.

◇ New development models fostering growth and employment

This prospective work will seek to explore new sustainable development models to foster growth, job creation, equal opportunities, the reduction of inequalities and the improvement of quality of life. It will investigate the dynamics of creation and distribution of wealth, in a globalised economy where "intangible" and service factors predominate. This will involve the development of indicators and methodologies for assessing the social and economic added value of the various production models, identifying competitiveness factors including human capital, and characterising the different policies best adapted to the European economic area, taking into account Europe's regional divergences, and the evolution of Europe in terms of world economic relations.

- Support for the development of scientific and technology policies in Europe

In order to support the development of the specific base of knowledge about scientific and technology policy issues which is needed by both national and European decision-makers and other users, these activities provide a flexible, strategic intelligence-gathering, collating and evaluation service. By underpinning and complementing the activities carried out at national and international level, the activities are intended to promote the exchange of information and experience between decision-makers and researchers and enable knowledge to be put to better use.

◇ Strategic analysis of specific political issues

This activity involves the provision of support for the analytical and collating work to be carried out on a limited number of specific issues relating to scientific and technology policy. The matters to be dealt with will be identified by decision-makers and other players concerned with science and technology policies in the following fields:

- matters relating to the implications, for science and technology policies, of the challenges posed by scientific and technological change, globalisation, changes in social demands, the new forms of competition and cooperation between businesses, and job-creation and growth in a manner that is environmentally sound and contributes to social cohesion;
- matters relating to how the objectives and priorities of these policies and the instruments used to implement them enable them to be tackled and analysis of their socio-economic impact.

The JRC's Institute for Prospective Technological Studies will be closely involved in the preparation of the options and recommendations in which this work should culminate, through its technology assessment, technology watch and technology foresight work.

◇ Common basis of science, technology and innovation indicators

The design, coordination and assessment of RTD strategies in Europe require the availability of relevant and comparable indicators at different levels (national, regional, European, world), including indicators measuring progress towards sustainable development.

9.1.2 Interaction with related actions in other framework programme activities

A major feature of this programme will consist of the coordination and support of relevant activities throughout the framework programme, concerning, in particular, researcher's training, support for research infrastructures and the overall socio-economic dimension of Community research.

The target population of this operation is the following: scientists in training, research centres and universities.

9.2 Grounds for the operation

The world is increasingly based on knowledge. The Community's prime asset in this area is the quality of its researchers, engineers and technicians. The aim is to preserve and help develop this knowledge potential through greater support for the training and mobility of researchers and by enhancing access to research infrastructures.

The Community also has a solid tradition of research in social and economic science and the humanities, which needs to be mobilised to identify economic and social trends and requirements, both current and future, in order to contribute to the Community's competitiveness and quality of life of its citizens.

The research actions proposed conform to the objectives of the Framework Programme, as well as to the criteria set out both in Annex 1 of the Framework Programme and in the specific programme. These actions are, therefore, designed to ensure added value at European level and by their nature reflect major questions of European scale.

Under Article 130f of the EC Treaty, the Community will by this new action continue to strengthen European industry's science and technology base, foster the development of international competitiveness and promote research activity as deemed necessary under other chapters of the Treaty.

This continuation is proposed following an assessment, in line with the SEM2000 initiative, of the actions of the past five years.

This Proposal for a new operation follows the conclusions of the five-year assessment panel, notably in proposing that efforts be concentrated.

9.3 Monitoring and evaluation of the operation

9.3.1 Monitoring of the projects

Ex-ante evaluation

In order to guarantee the quality of RTD projects, the Commission will evaluate all the proposals received, following calls for proposals, on the basis of the priorities indicated in the specific programmes and the work programmes. For this purpose, it will be assisted, *inter alia*, by independent experts.

Intermediate and final project evaluation:

It is the responsibility of the project coordinator to send the Commission, at regular intervals, the technical and financial progress reports; the detailed final (technical and financial) report covering all the work carried out, setting out the results obtained and the objectives attained and summary reports for publication. These reports will be monitored by the Commission staff, possibly with the assistance of outside experts.

9.3.2 Monitoring and evaluation of the specific programme

Annual monitoring of the implementation of the specific programme:

The Commission will examine each year, with the help of appropriately qualified independent experts, progress with the implementation of the specific programme in the light of the criteria set out in Article 3(2) of the specific programme.

It will assess, in particular, whether the objectives, priorities and financial resources are still appropriate to the changing situation. Where appropriate, it will submit proposals to adapt or supplement the specific programme.

Five-year and/or final evaluation:

In addition, before submitting its proposal for a Sixth Framework Programme, the Commission will have an external assessment conducted by high-level independent experts on the management of, and progress made in, Community activities carried out during the five years preceding the assessment, in particular in the light of the criteria set out in Article 3(2) of the specific programme. The Commission will communicate the conclusions of this assessment, accompanied by its comments, to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions.

Furthermore, in accordance with Article 130p of the Treaty establishing the European Community, the Commission produces an annual report to the European Parliament and the Council on activities relating to research and technological development and the dissemination of results.

10. ADMINISTRATIVE EXPENDITURE (PART A OF THE BUDGET).

Not applicable.

Proposal for a
COUNCIL DECISION
adopting a specific programme for research
and technological development, including demonstration,
to be carried out by means of direct actions
for the European Community
(1998-2002)
by the Joint Research Centre

COUNCIL DECISION

adopting a specific programme for research and technological development, including demonstration, to be carried out by means of direct actions for the European Community (1998-2002) by the Joint Research Centre

(.../.../EC)

0184 (CNS)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 130I (4) thereof,

Having regard to the proposal from the Commission¹,

Having regard to the opinion of the European Parliament²,

Having regard to the opinion of the Economic and Social Committee³,

Whereas, by Decision No .../.../EC⁴, the European Parliament and the Council adopted a Fifth Framework Programme of the European Community activities in the field of research, technological development and demonstration (RTD) for the period 1998 to 2002, specifying *inter alia* the activities to be carried out by means of direct action;

Whereas Article 130 I paragraph 3 of the Treaty stipulates that the framework programme shall be implemented through specific programmes developed within each of the activities integrating it, and that each specific programme shall define the detailed rules for its implementation, fix its duration and provide for the means deemed necessary;

Whereas, according to article 4, paragraph 2 of the European Parliament and Council Decision n° 1110/94/CE of 26 April 1994, concerning the European Community Fourth Framework Programme for activities in the field of research, technological development and demonstration (1994-1998)⁵ and to article 7 paragraph 3 of the Council Decision related to the specific programmes implementing the Direct Action in the Fourth Framework Programme, the Commission has requested to proceed to an external evaluation which has been transmitted, with its conclusions and observations, to the European Parliament, to the Council, to the Economic and Social Committee and to the Committee of the Regions;

Whereas the Board of Governors of the JRC has been consulted on the scientific and technological objectives of this specific programme as described in the working document adopted on 5th November 1997⁶ by the Commission and also on the present Decision;

1 OJ No.

2 OJ No.

3 OJ No.

4 OJ No.

5 OJ No. L 361/114

6 COM(97)553 final, 5.11.1997

Whereas according to Article 130 J of the Treaty, the decision .../.../EC, concerning the rules for the participation of undertakings, research centres and universities and for the dissemination of research results⁷, is applied to the present specific programme and allows the participation of the Joint Research Centre in indirect actions;

Whereas in the implementation of the present programme, international co-operation activities could be appropriate, in conformity with notably Article 130 M, with third countries or international organisations;

Whereas the implementation of the present programme also includes activities and mechanisms aiming to stimulate, disseminate and exploit RTD results, in particular towards small and medium enterprises (SMEs), as well as activities supporting mobility and training of researchers;

Whereas, according to the objectives of the first Action Plan for Innovation, research activities in the Fifth Framework Programme must be better oriented to innovation; whereas the JRC should actively pursue activities in innovation and technology transfer;

Whereas implementation of this programme should be monitored with a view to its possible adaptation to scientific and technological developments and needs; whereas in due course there should be an independent evaluation of the progress of the programme;

HAS ADOPTED THIS DECISION:

Article 1

1. In conformity with article 3 paragraph 1 of the Fifth Framework Programme, a specific programme related to direct research and technological development actions, including demonstration, to be carried out by the JRC, (hereafter referred as the "specific programme") is hereby adopted for the period from [.....] to 31 December 2002.

Article 2

1. In agreement with annexe III of the Fifth Framework Programme, the amount deemed necessary for the execution of direct actions by the JRC under this programme (hereafter referred as the "amount") is 815 million ECU.
2. An indicative breakdown of this amount is given in Annex II.
3. Of this amount,
 - 200 million ECU are for the period 1998-1999
 - 615 million ECU are for the period 2000-2002.

7 OJ No.

This amount will be adapted, in accordance with the conditions established in article 3 paragraph 3 of the Fifth Framework Programme.

4. The budgetary authority shall lay down, in accordance with the scientific and technological objectives and priorities detailed in the present decision, the appropriations for each financial year, subject to the availability of resources within the pluriannual financial perspectives.

Article 3

1. Annex II specifies the major domains, scientific and technological objectives and priorities of this programme, which are defined according to the fundamental principles and to the three categories of selection criteria indicated in Annex I of the Fifth Framework Programme.
2. The rules for dissemination of results apply to this specific programme.
3. The general rules for the Community's financial contribution are laid down in article 4 of the Fifth Framework Programme.
4. Direct RTD actions are defined in Annex II and IV of the Fifth Framework Programme.
5. Annex III sets out the specific rules for implementing this programme.

Article 4

With due regard to the criteria set out in article 3 paragraph 1, and to the scientific and technological objectives and priorities indicated in Annex II, the Commission shall:

- a) monitor the implementation of this specific programme and submits, if necessary, proposals for adaptation, in conformity with article 5 paragraph 1 of the Fifth Framework;
- b) make an external assessment of the activities carried out within the areas covered by this programme, as foreseen in article 5 paragraph 2 of the Fifth Framework Programme.

Article 5

1. The Commission establishes a work-programme detailing:
 - a) the contents of Annex II
 - b) an indicative time table for the implementation of the specific programme.
2. This work-programme is updated, if necessary.

Article 6

1. The Commission is responsible for the implementation of the present programme, carried out by the JRC.
2. The Commission is advised by the Board of Governors of the JRC (hereinafter referred to as the Board of Governors) in this task.
3. The representative of the Commission submits to the Board of Governors:
 - a) projects of measures related to the establishment and updating of the work-programme referred to in article 5 of this Decision;
 - b) the terms of reference for the external evaluation foreseen in article 5.2 of the Fifth Framework Programme;
 - c) any necessary adaptation to the objectives and priorities indicated in Annex II, or the distribution of financial resources indicated in Annex I of the specific programme, to ensure that it is still appropriate in view of scientific and technological developments and needs.
4. The Commission regularly informs the Board of Governors of the implementation of this specific programme.

Article 7

The Commission may request the JRC to execute, on the basis of the criterion of mutual benefit, projects with legal entities established in third countries when this contributes effectively to the execution of direct actions.

Article 8

This Decision is addressed to the Member States.

Done at Brussels,

For the Council

The President

ANNEX I

Indicative Breakdown of The Amount Deemed Necessary for This Programme

SERVING THE CITIZEN	39,39 %
ENHANCING SUSTAINABILITY	43,56 %
UNDERPINNING EUROPEAN COMPETITIVENESS	17,05 %
TOTAL	815 MECU ^{(8),(9)}

⁸ of which approximately 6% may be allocated to exploratory research

⁹ This total includes the JRC's budget contribution necessary for its participation in shared cost actions

ANNEX II

Scientific and Technological Objectives and Priorities of the Direct Actions

A. The Mission of JRC

The mission of JRC is to provide customer-driven scientific and technical support for the conception, implementation and monitoring of EU policies. As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union. Close to the policy-making process, it serves the common interest of the Member States, while being independent of commercial or national interests.

Carrying out specific high-level research in close contact with industry and other bodies, the JRC supports the policy maker in addressing the concerns of the individual citizen, alleviating conflict between man and the environment and promoting sustainable development.

The JRC's work depends upon intensive networking with public and private institutions in the Member States through, for example, research networks, joint projects or staff exchanges. This is important because the JRC's mission is complementary to the indirect action part of the 5th Framework Programme; while the indirect actions will continue to be the EU's main mechanism for developing and testing new ideas, the JRC's role is to help apply them in the service of the policy maker.

B. Objective: Support the Management of Change

Progress in technology, especially in the life sciences and information technology, is changing the way we live, the way we do business and the world we live in. These changes are complex and inter-related so those involved with policy need support in understanding how to harness the technologies to provide better services to the citizen, to allow industry to take advantage of new opportunities and to promote policies that protect the citizen from the risks that accompany the benefits of such changes. JRC as the scientific arm of the Commission, must be able to underpin the management of change by supporting the EU policy making process through : facilitating a better understanding of emerging issues ; providing scientific and technical support to the elaboration and implementation of policies ; providing realistic monitoring of the effectiveness of policy measures.

The two selection criteria for JRC activities are:

- Relevance to EU policies. An understanding of the policy agenda allows JRC research to be timely and support the formulation of policy where it is most needed.
- Subsidiarity. This has two aspects. Firstly the research must be in an area where EU involvement is appropriate and secondly it should be appropriate for this involvement to be through the JRC. Thus JRC operates in areas such as cross-border-issues, consumer protection and anti-fraud where its unique pan-European identity provides an added-value

C. The JRC Programme

JRC's specific programme for the Fifth Framework Programme reflects the large changes that have taken place in Europe and the wider world in the past ten years. Whilst these

changes have all been beneficial for growth and prosperity, care is needed to ensure that the growth continues, that European industry can compete on a fair basis within the internal market and on the wider world market, that the growth is sustainable and that Europe's citizen's can live in a clean and safe environment.

Accordingly JRC's programme has been divided into three main themes:

- I. Serving the citizen
- II. Enhancing sustainability
- III. Underpinning European competitiveness

The objective of the first theme is to provide support to policy that protects individual citizens. This includes measures to give the consumer confidence that the food he or she eats or buys is identified and labelled correctly, that the European tax payer is protected against fraud, that he or she can fully utilise the benefits of modern medicine, that the information that he or she receives is dependable and that he or she is protected against natural and man-made hazards.

The second main theme is sustainability; achieving growth whilst protecting the environment, conserving natural resources, maintaining biodiversity and ensuring that EU can continue funding the relevant policies and avoiding that efforts in these regards are not undermined by fraud. It is a major EU-policy objective that environmental considerations be integrated into all other policies and framing legislation that achieves this integration whilst maintaining a broad free market policy is a major challenge to legislators. JRC will support sustainability through analysis of the environmental impact of policy options, through support to anti-fraud measures in the agriculture and fishery policies, through support to the international effort to prevent global change and through the study of how European ecosystems are changing and could be preserved.

The main objective of the third theme is to contribute to the EU's industrial competitiveness policy by supporting the transfer of knowledge and research results from the scientific community to industrial users. The JRC will for example, exploit its specific expertise to facilitate the utilisation of the latest technologies by emerging industries, such as earth observation and advanced materials (e.g., biomaterials). Other appropriate actions will be taken to support key policy areas such as enlargement and integration of candidate countries into a common internal market, pre-accession and EU-Mediterranean co-operation, where further efforts are required to optimise potential synergies between the scientific and industrial communities of the EU and its partner countries.

Two horizontal elements run through all three JRC research themes. The first of these, measurements, standards and testing, constitutes one of the key specialities of the JRC. The second is a techno-economic intelligence that can provide EU institutions with timely advice concerning the development of new technologies, the likelihood of breakthroughs, the social challenges that they pose and their possible impact on policy. This includes monitoring developments in the other major industrialised trading blocs to determine what lessons can be learned. Both these tasks are generic to all JRC activities - even where not explicitly mentioned.

Finally the programme which follows should not to be considered a rigid blueprint for the work programme of JRC over the next four years but rather a general outline that reflects

the current view of the policy agenda and its priorities. Changes to the JRC programme are to be expected as science and technology advance and as the policy agenda and the priorities of the customer change.

I. SERVING THE CITIZEN

The first theme of JRC's research is centred on the citizen. The objective is to support those EU policies that are intended to protect him or her, provide him or her with information, maintain his or her health and protect his or her safety.

Consumer policy and consumer health protection are most important factors in EU policy and, in fact, the legal basis for consumer protection will be further strengthened by the Amsterdam Treaty. The main objectives of the policy are to protect the consumer in the internal market; to reinforce market transparency; to improve consumer confidence, especially by a more complete and effective information and education; develop a system of dialogue and consultation between the European Commission and organisations representing consumers, and improve the dialogue between the latter and industry; and to ensure that the interests of the consumer are given due consideration in the development of other EU policies. JRC will provide scientific support for this policy.

Along with biotechnology, information technology is the fastest moving technology and the EU's information society initiative, whilst recognising that progress is driven by market forces, ensures that policy fully takes advantages of the benefits of the technology and that individuals can depend on information that has been processed securely. JRC will support the initiative through technical advice on dependable services and improving the ease of access to information.

The third thrust of JRC's effort in services to the citizens is in health. The objective here is to exploit specific technologies where the JRC has unique technologies and expertise for the diagnosis and treatment of disease.

Beside safety of food and feed products, EU measures to protect the safety of citizens include, amongst others, car safety legislation, directives on industrial safety and construction guidelines. JRC will provide a technical back-up to these measures, determine how new technologies can help cope with natural disasters with a cross-border dimension such as flooding and contribute to the EU effort on civilian de-mining.

I.1 Consumer Protection

For consumer health EU institutions manage scientific committees whose work is based on excellence, independence and transparency; carry out inspections to ensure that rules of hygiene and food safety are respected; and evaluate and assess possible risks to consumer health.

This marked strengthening of consumer policy has been prompted by the general desire to match, on the one hand, the rapid growth in the possibilities offered by advanced technologies to increase the variety and lower the costs of products in the market by, on the other hand, adequate measures to protect consumers. It is clear that a strong scientific support to this policy is required - both to understand the complex issues involved and to apply the latest technology for checking the quality and origins of products. JRC will support EU policy in this area by applying emerging technologies for consumer protection

measures and will be ready to assess and react to new hazards as they occur. This work will involve:

- Research to underpin the harmonisation and validation of methods for quality and safety analysis of feeding stuffs, food, beverages, and consumer products; provision of references for the determination of food and beverages authenticity and origin, for the establishment of inspection practices and for risk-assessment; methods and references in support of food-labelling and development of anti-fraud techniques.
- Support to implementation of Community policy on biotechnology including methods for the monitoring and detection of genetically modified organisms and risk assessment studies.
- Toxicological studies on the impact and health effects of diverse food contaminants, toxic chemicals (e.g., endocrine disrupters) and pathogenic micro-organisms; establishment of models and procedures for risk assessment.
- Validation of safe alternative procedures to in-vivo experiments currently used to determine the toxicological hazards posed by chemicals, pharmaceuticals and consumer products.

I.2 Medical and Health Applications

Several JRC generated technologies related to nuclear engineering, metrology, informatics and material sciences have potential applications in the area of medicine and health care and are sufficiently mature for further development. The implementation of this work will rely on the use of JRC facilities and unique expertise, and will continue to be carried out in networks together with the medical and pharmaceutical communities; it will include:

- Active support to development of anti-cancer therapies based on nuclear technologies, applications of boron neutron capture therapies and alpha-immuno therapies and to medical imaging.
- Prenormative research and validation of testing methods for bio-compatible materials and bio-mechanical components; qualification of certain medical equipment for the harmonisation of norms and standards; development, production and certification of reference materials for clinical diagnostics and validation of testing instruments.
- Support to telematics systems for the secure exchange of regulatory information on pharmaceuticals in the EU.

I.3 Benefiting from the Information Society

JRC's information technology expertise will be used to support dependability aspects of the EU's information society initiative and to strengthen fraud control measures; the work includes:

- Support to the European dependability initiative including research on systems survivability, dependability characterisation of services and qualification procedures for embedded systems; application and demonstration of emerging networking technologies, decision support systems and medical data systems; use of research results in statistical and geographic information applications.

- Support to anti-fraud measures including the development and operation of effective, reliable and safe communication systems amongst EU public authorities and the Commission, development of an early-warning system and methods for analysis and control of large quantities of information from different sources.

I.4 Safety of the citizen: man-made hazards and natural hazards

The EU has a number of measures to protect individuals against hazards. These include standards in car construction, high pressure equipment, obligations on the labelling and notification of dangerous chemicals and the notification of accidents. JRC plays an active part in the implementation of these policies and in support for the development of new safety measures.

- Support of Community industrial safety regulations through analysis of industrial accident data, supply of information to the competent authorities and industry and technical advice to the Commission.
- Design, prototyping, validation and harmonisation of inspection procedures for High Pressure Equipment, with a view to provide maximum safety at the work place; support to the development and implementation of new standards. Interactions of hydrogen with structural materials and preparation of industrial safety norms and standards.
- Monitoring, control and management of chemical products: implementation and improvement of regulations for the notification, authorisation, classification and labelling of new and existing chemicals; research on environmental risk assessment.
- Maintenance and further development of a research platform contributing to the scientific and technical basis needed for civilian land de-mining operations; compilation of an index of mine types and their signatures; development of strategies for examining mine fields and establishing secure detection and destruction methods; establishment of reference criteria and standards and validation of clearing methods and available devices.
- Chemical characterisation and tools for the determination of the origin of illicit drugs.
- Characterisation of the structural safety of transport vehicles and crash barriers; calibration of test facilities in the Member States together with validation of simulation methods intended to complement traditional impact tests.
- Support to the establishment of a common European reporting system for in-flight incidents including analysis of the influence of human error.
- Support to the formulation and development of construction standards (Eurocodes); research to ensure safety and reliability of buildings and civil engineering structures against seismic movements, rapid impacts and traffic vibrations including applications for the preservation of significant monuments for the European cultural heritage, assessment of their degradation and techniques for their restoration.

- Applications of Earth observation techniques for the risk and damage assessment, monitoring and post-crisis management of natural hazards such as forest fires, floods, landslides, droughts, and coastal storms.

II. ENHANCING SUSTAINABILITY

Technological development, sustainable growth, respect and care for the environment are key issues for the Union, enshrined in the Treaty and pursued through common policies and actions.

The Community's Fifth Environmental Action Programme (1992-2000) forms the basis of environment policy of the EU and describes the challenge of the 1990s as making progress towards sustainable development. A recent published action plan identifies five priority areas where Community action needs to be stepped up. These are firstly improved integration of the environment into other policies such as agriculture, transport, energy, industry and tourism; secondly the use of a wider range of instruments, especially market based instruments but also structural policy, to implement Union policy; thirdly improving the implementation and enforcement of Community legislation; fourthly a raising of public awareness and lastly a raising of the Union's profile in international affairs - strengthening co-operation with Central and Eastern European countries and the Mediterranean Partnership countries, enhancing the EU's role in international environmental actions and dealing with trade and environmental issues.

JRC's scientific and technical services will provide the expertise necessary to help in the understanding of the issues involved and to support the implementation of all five points of the action plan. Its broad range of disciplines will contribute to the establishment of sound and feasible limits for pollutants, the production of commonly accepted reference materials and measurements for monitoring them, the determination of the impact of proposed legislation, the identification of the best available technologies and the assessment of available scientific knowledge for improving industrial processes and reduce pollution, the understanding of global climate change processes and their impact, the identification of new technologies that could affect sustainability. Particular efforts will be made in the energy and transport sectors.

The JRC research aimed at enhancing sustainability will provide support to the Commission, the European Parliament, the Member States and relevant EU Agencies, and will include the following targeted issues:

II.1 Integration of environmental protection in other EU policies

The Commission is obliged by Treaty to assess the consequences of any proposal that has an impact on the environment and to endeavour to integrate sustainability objectives into all sectoral policies such as agriculture, energy, transport and regional development. JRC will support this effort through:

- Socio- and techno-economic studies to improve the integration of environmental protection in sectoral EU policies, including case-studies and development of methods to measure and analyse regulatory instruments (e.g. "green-accounting").
- Research on land cover and land use dynamics, regional and urban development trends; research on agro-environmental issues mainly using earth observation; coastal zone

management, development and harmonisation of indicators of environmental degradation.

II.2 Pollution prevention and control

EU legislation requires that new industrial developments use the best available techniques in order to reduce pollution in an integrated manner – i.e., to take account of all forms of pollution - air, soil and water. As a support to this and all other pollution control management measures it is a prerequisite that systems be developed for detecting pollutants and that measurements throughout the Union be harmonised. JRC's work will therefore involve:

- Support to environmental legislation for integrated (e.g. water, air, soil) pollution prevention and control in industry; development of the reference framework for the use of best available techniques in several industrial sectors; assessment of the impact of legislation on competitiveness and employment.
- Support to the international harmonisation of pollution monitoring techniques; development and production of reference materials and measurements in different matrices (e.g., soil, water, air, biota, etc.), for pollution control.
- Research to underpin the harmonisation and validation of reference methods for the analysis of water quality, water monitoring, water treatment and water management; assessment of toxicological risks posed by water pollutants; interventions in emergency cases; procedures and criteria for water quality control; studies on water management practices and their impacts in geographical areas protected by European legislation and in those prone to flooding and drought.
- Development of techniques for localisation of soil contamination due to industrial and military activities and to monitor marine pollution events (e.g. algae blooms, oil spills) including the detection of vessels causing pollution.
- Research to underpin harmonisation and validation of air-quality control methods and criteria for air-quality in urban and con-urban areas; impact of alternative fuels on air quality and emissions of micro-particulates; surveillance of radioactivity in the environment; regional programmes for environmental monitoring of selected regions (e.g., the Alpine Convention).

II.3 Global change

By signing the "Kyoto Protocol", industrialised nations have committed themselves to reducing greenhouse gas emissions. The EU, which negotiated on behalf of the member states, has promised to reduce emissions to 8% below 1990 levels. The EU needs strong technical support in order to maintain credibility as a Party to the Climate Convention, strengthen its position on the international scene, understand possible futures for Europe including implications for managed and unmanaged natural resources, public health and biodiversity, highlight risks and uncertainties and formulate appropriate policy. JRC will support EU policy by:

- Study on the fluxes of greenhouse gases and aerosols; research on the processes leading to greenhouse emissions; assessment of the consequences of the Kyoto

Protocol on emission levels, air quality, climatic change and the European economy; support to European political initiatives.

- Exploitation of earth observation for mapping, monitoring and making and inventory of key global, marine and terrestrial resources. Global information systems and models will support the analysis and understanding of observed trends. Access to global data sets will be provided to European research networks.

II.4 Energy and transport

The final consumption of energy in Europe is divided almost equally between industry (29%), transport (32%) and the household and tertiary sectors (39%). The majority of this is from fossil fuel with petroleum products dominating the transport sector and almost two thirds of all coal being used for the production of electricity. Only by effective measures to reduce emissions and replace fossil fuels with renewable energies can Europe respect international agreements and achieve sustainable growth. The 1996 Green Paper on renewable energy found that the EU Treaty offered ample scope for promoting renewable energy and suggested that the EU reinforce its policy in order to achieve a target 12% of gross inland energy consumption by 2010. JRC will support EU policy through:

- Integration of renewable energies in energy systems and related socio-economic studies; development of new testing techniques and proposals for the preparation of norms and standards for photovoltaic and solar thermal systems, the new generation of energy - storage systems, fuel cells and the typology of insulation materials; study of hydrogen as a fuel with particular regard to safety issues and analysis of techno-economic aspects.
- Improvement and assessment of advanced materials and new surface treatments to enhance the safety and efficiency of high temperature systems; applications to the reduction of emissions and improvement of cost effectiveness of high efficiency power generation systems and components, including engineering and materials techniques for extending operational lifetimes of engines and plants; contribution to the development of new norms and standards. Harmonisation of testing methods, inspection procedures, and standards for characterising structural materials and components.
- Research on the interaction between neutrons and materials; provision of neutron reference data for energy production in the framework of international conventions. Related techno-economic studies and high-level training in support to industry, with particular attention to partners in enlargement and pre-accession countries.
- Development and validation of new emission control and reduction technologies for land, air and sea transport systems; analysis of data concerning various emission-reduction technologies and creation of a reference laboratory for co-ordination of round robin experiments and networks; execution of cost benefit studies and techno-economical modelling, and development of the technical standards base.
- Studies to assess demand evolution for urban and regional transport systems.

II.5 Agriculture, rural development and fisheries

EU policy is to make agriculture more competitive in world markets and to give new priority to sustainable rural development, consumer-friendly products and more environmentally sensitive practices. It should prepare for the Eastwards enlargement which means a 50% increase of agricultural land and a doubling of the farm labour force. Fraud control is important because of the size of the budget involved and because of health concerns in the case of agriculture, and because of sustainability concerns in the case of fisheries. JRC will continue to play an active role in supporting policy through:

- Prospective techno-economic studies and scenarios to support better understanding of long-term trends of policies related to the food chain and to regional development policies. Emphasis will be on the contribution of science and technology to these central EU policies and will consider the wider political context (e.g. enlargement, Mediterranean policy).
- Studies on the evolution of the rural environment; Earth observation monitoring of changes in rural and coastal areas (environmental impacts, forest development and management, trends in agriculture and aquaculture, tourism); coastal zone management.
- Development and assessment of methods for the surveillance of regulated activities in the fisheries sector.
- Development of agro-meteorological models for the prediction of crop yields (particularly with a view to EU-enlargement); monitoring of results to ensure consistency with priorities of the Common Agricultural Policy and antifraud measures; harmonisation and quality control of work done in Members States on farmers declarations; re-orientation of the agriculture information system towards priority sectors of agricultural activities; development of advanced statistical methods and sampling strategies to control subsidies at the decisive stage of the clearance of accounts.
- *Design and operation of a data-base for registering and monitoring livestock movements throughout the European Union; technical support for the implementation of a reliable identification and labelling system for the entire EU herd, including overall quality control and electronic systems certification.*
- Development and production of certified reference materials and development of reference methods for securing the quality of agricultural products (e.g., nutritional components, trace contaminants in raw materials, etc).

III. UNDERPINNING EUROPEAN COMPETITIVENESS

The primary contributions of the EU towards economic development, growth and the creation of employment are the promotion of industrial competitiveness and an efficient internal market in all products and services. The EU likewise negotiates trading agreements with third countries that ensure fair access to markets for EU products and stimulate economic growth in developing countries. Economic growth is also the objective of structural funding, including programmes such as PHARE and TACIS, that can help prepare less favoured regions and countries for fuller integration in the internal market and the global economy.

Fair trading depends on internationally agreed standards and JRC will continue to support the promotion and development of soundly-based European and international norms, standards, codes of practice and reference tools. Support to structural policy will include the transfer of technology developed in JRC to industry and measures to stimulate the competitiveness on world markets of emerging industries, such as earth observation, where JRC has specific expertise, and the development of a scientific infrastructure in the Mediterranean Partnership countries. These efforts will be backed up by more generic studies to determine how technology is transferred from research to industry and how employment is affected by changing patterns of industry.

III.1 Employment, technology and industrial competitiveness

The issues related to employment and competitiveness will continue to dominate the political debate in Europe in the years to come. JRC will support this issue through:

- Investigation of the technology, employment and competitiveness inter-relationship. Identification of best practices to foster growth and employment. Analysis of the influence of societal trends (age, gender, etc.), structural changes in sectors (industry, services, institutions, etc.) technology changes and EU policies (Euro, enlargement and deregulation, etc.) on future competitiveness and employment in Europe.
- Analysis of factors limiting the development of less favoured European regions with a view to eliminating bottle-necks and improving competitiveness and employment; prospective analysis of European research priorities and role of science and technology for regional development.

III.2 Normative support to the international trading system

Industries need predictable and reliable market access conditions before making the considerable investments needed for their penetration. There is also a need for all market operators to refer to well-established, verifiable and internationally accepted measurements, in order to ensure the transparency of market regulations and avoid unfair competition and unnecessary litigation. In pursuance of these objectives, JRC will undertake:

- The characterisation, production, storage, stability testing and international distribution of Bureau Commun de Reference (BCR) certified reference materials is underpinning many of the activities performed by JRC in support of different policies (environment, consumer protection, health, industrial competitiveness, etc); production of industrial certified reference materials particularly when urgent intervention is needed or when stocks need to be replaced.
- Development and performance of primary isotopic measurements; production of isotopic reference materials and establishment of a virtual institute of primary isotopic measurements with national measurements institutes, for transboundary comparability of chemical measurements, to support accreditation bodies and quality assurance systems and to realise traceability of chemical measurements to common references; support to member states in building up their own metrology systems.
- Development and validation of analytical reference methods for elements and their chemical forms, radionuclides and organic constituents; research on radionuclide

metrology for the preparation of primary standards, equipment calibrations and determination of trace elements.

- Prenormative research and support to the development of measurement and testing standards for materials in emerging technologies such as nanotechnologies.

III.3 Innovation and technology transfer

It is universally acknowledged that innovation drives competitiveness and growth. JRC will support efforts to understand the processes that control the transfer of knowledge from the research sector to the private sector and take steps to maximise the benefit of its own technology to industry. The work includes:

- Studies related to Europe's innovation system aiming at improving the exploitation of the Europe's scientific and technological potential. Particular attention will be given to the identification of best methods and practices for the creation, transfer and trading of knowledge, organisation of enterprises, educational and training requirements and the specific needs of SMEs, developing the interface of JRC networks with the Enterprise Policy's networks
- Support to the development of a competitive and sustainable value-added Earth observation industry in Europe by identification of new users, development of new products and services and development of tools support customers of Earth observation data, information and services.
- Exploitation of JRC results; studies to understand users' needs; selection of innovation and technology transfer projects for JRC-developed technologies; prototyping and demonstrations to users and potential investors. Priority will be given to collaboration with high technology SMEs.

III.4 Enlargement, pre-accession and international co-operation

The increased technology flows under the globalisation of markets, the current EU external-policy objectives and the need for efficient protection of the financial interest of the EU, call for strengthening dialogue and co-operation on science and technology issues with future partner countries. JRC will support the enlargement process by sharing its knowledge with scientists from future EU Member States, hosting their scientists and encouraging them to use its facilities and join its networks. In particular JRC will:

- Promote the association to international measurements evaluation programmes of relevant organisations in candidate countries to EU-enlargement and in other third countries; extension to industries and research institutions in these countries of the networks for advanced materials and standards.
- Develop the co-operation with Southern and Eastern Mediterranean Partnership countries with a view to exchange best practices, scientific knowledge and produce techno-economic input to the objectives of the Barcelona process.
- A multidisciplinary database of harmonised and coherent geographical data for an enlarged European Union. JRC will provide the necessary technical co-ordination and will foster the development of standards for software and methods aiming at the complete interoperability of geographic information systems.

ANNEX III

Specific Rules for Implementing the Direct Actions

1. The Commission shall implement the direct actions on the basis of the scientific objectives and contents described in Annex I. To this end, it is advised by the Board of Governors of the JRC. The activities relating to this action shall be performed in the relevant institutes of the Joint Research Centre (JRC).
2. In the implementation of its activities, the JRC will, whenever appropriate and feasible, participate in or organise networks of public and private laboratories in the Member States or European research consortia. Particular attention shall be paid to co-operation with industry, especially with small and medium-sized enterprises. Research bodies established in third countries may also co-operate on S&T co-operation between the Community and the third countries concerned. Particular attention will be paid to co-operation with research laboratories and institutes in the countries of central and Eastern Europe and the former Soviet Union.

The knowledge gained through implementation of the projects will be disseminated by the JRC itself (taking into account possible limitations due to confidentiality issues).

3. The accompanying measures shall include:
 - the organisation of visits to JRC institutes of grant holders, visiting scientists and seconded experts,
 - organisation of the secondment of JRC staff to national laboratories, industrial laboratories and universities,
 - specialised training in support of the elaboration or implementation of European policies and specialised training with emphasis on multidisciplinary,
 - systematic exchange of information, through *inter alia* the organisation of scientific seminars, workshops and colloquiums and scientific publications,
 - the independent scientific and strategic evaluation of the performance of the projects and programmes.

ANNEX IV

List of Major Tools and Facilities of the JRC

To carry out its mission JRC has a unique combination of facilities and expertise that draw strength from research performed in collaboration with bodies from the Member States and which, by their nature or cost, have to be set up at a European level.

- The ELSA (*European Laboratory for Structural Assessment*), is one of the world's largest reaction walls. It is 16 m high and 21 m wide and is designed to resist to forces necessary to deform and seriously damage full-scale test models of buildings and other large civil-engineering structures and historical monuments, to test methods for their strengthening and repair, and to conduct prenormative research on design/structure standards in the EU.
- The LDTF (*Large Dynamic Test Facility*) is used for the characterisation of the mechanical properties of traditional and new structural materials (aluminium, concrete, steel, composites, etc) critical for safety (aerospace, automotive, energy, mechanical, offshore industries). The facility allows dynamic testing of large specimens and enables precise measurement of the energy flow at the moment of an impact. The installation uses the elastic energy stored in 100 meter long cables, pre-loaded by two hydraulic pistons and held by explosive bolts, the rupture of which liberates the energy to the specimen.
- The LISA, (*transportable Linear Synthetic Aperture rail radar*) is a high precision facility for the assessment of structural changes of large constructions, impact analysis of natural and man-made hazards on the environment (e.g. land sliding, industrial and military waste, etc.).
- The EMSL (*European Microwave Signature Laboratory*), a facility enabling new ground to be broken in the study of radar imaging. It consists of a domeshaped radio anechoic chamber with a radius of about 10 metres, which facilitates measurement of radio scattering parameters for natural sized objects. Movable and fixed antennae measure bistatic, polarimetric scattering parameters of a target mounted on a movable platform, e.g. enabling the measurement of the 'radar identity card' of cars which can then be used in automatic navigation systems.
- The EGO, (*European Optical Goniometer*), a facility for the characterisation of natural and man-made targets by its optical and thermal properties. This facilities allows to analyse the spectral emission and scattering characteristics under controlled environmental conditions with both natural and artificial light sources. It provides a unique test and evaluation capability for the certification of optical sensors of the next generation (e.g., "intelligent sensors").
- The *Cyclotron* particle accelerator (40 MeV Variable Energy) installation is used to produce medical radioisotopes. A very important project is PET (Positron Emission Tomography) in which regional authorities, local hospitals and the JRC work together to create new insights in this promising brain imaging technology. Another application creates radio-nuclides in the surface layer of samples by irradiation. This 'activated thin

layer' then provides information, through the gamma radiation it emits, on the material's behaviour under operational conditions like for the study of wear in car engines.

- The ESTI (*European Solar Test Installation*) is the European reference laboratory for photo-voltaic technology. It measures, tests and certifies photo-voltaic cells, modules and installations. It recently received its quality assurance accreditation. It provides support for a new and fast-developing technology in a sector where European industry and individual national laboratories have limited test facilities.
- The 150 MeV GELINA (*Geel Electron Linear Accelerator*) is one of the most powerful white spectrum neutron sources available in the world. It is unrivalled for the study of neutron-material interactions and in particular neutron cross-section measurements. Its European designation has made it the key facility for determining the high resolution neutron data requested.
- The "INDOORTRON" laboratory, a 30 m³ volume walk/- in environmental chamber featuring controlled temperature, relative humidity, air-quality and exchange rate. By using this chamber, it is possible to perform emission testing of equipment, determine release dynamics of indoor materials, test models that predict indoor air pollutant concentrations, test efficiency of air-cleaning device, perform human exposure studies.
- The AMAL (*Advanced Mobile Analytical Laboratory*) allows to assess contamination of industrial sites and land-field, the control of waste-water, and more generally the on-site chemical analysis of organic and inorganic pollutants.
- The *ultra-clean chemical laboratory* has a surface of 120 m², providing 16 workplaces of which 6 or 8 can be occupied simultaneously. The laboratory has a "class 10" status, meaning that less than 10 particles larger than 0.5 µm will be found in 1 cubic foot of air. The laboratory is used for all kinds of ultra clean manipulations such as the characterisation of ultra low concentrations of trace elements. There are only 5 laboratories of this kind world-wide.
- The JRC has the largest European concentration of *high performance mass spectrometers*, used as analytical tools in many of its activities such as isotope measurements of highest accuracy as needed for nuclear and environmental reference measurements, certification of primary reference materials, validation of measurement procedures in medical diagnosis, achieving traceability of chemical measurements to the Système International, development of advanced methods for food authentication and determination of the origin of illicit drugs.
- *Multi-functional and flexible laboratory* for the production of environmental, biological, clinical, agricultural and industrial reference materials with Europe's most advanced facilities and technologies like clean chambers for handling of materials, cryo grinding, freeze drying, high purity milling and ultrafine classification, levitation melting.

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List of major Offices and Reference Laboratories

The JRC has constituted and operates a number of offices, bureaux and reference laboratories in support of different EU-policies:

- The Centre for Earth Observation (CEO), the aim of the CEO is to grow the customers and market for Earth Observation (EO) data, information and services. (Communication from the Commission to the Council and the European Parliament, COM(96)617 final).
- *European Office for Wine, Alcohol and Spirit Drinks (BEVABS)* in support of the EU legislation on the quality and origin of products in the sector.

(Communication from the Commission to the Council and the European Parliament COM(93) 360 final).

- European Centre for the Validation of Alternative Methods (ECVAM) to support the EU legislation on protection of animals used in toxicological tests and other scientific experiments. (Communication from the Commission to the Council and the European Parliament SEC(91) 1794 final).
- *European chemicals Bureau (ECB)* to support the EU legislation on the control and management of existing and new chemicals.

(Communication from the Commission to the Council and the European Parliament O.J. No. C1; 05.01.1993, p. 3).

- European Reference Laboratory for Air Pollution (ERLAP) and Radioactive environmental Monitoring (REM) to support the EU legislation on air quality and radiative environmental monitoring.
- *European Soil Bureau (ESB)*, a platform allowing Member States organisations producing soil maps to harmonise their work in order to better answer the technical challenges required to fulfil the needs of the EU policies.
- *Alps Observation and Information System ("Alps Observatory")* to support, within the frame of the Alpine Convention, the Alpine countries in the management and sustainable development of the rural Alpine space.

(Communication from the Commission to the Council and the European Parliament COM(93) 713 final).

- *The Tropical Forest Information System (TFIS)*, a major source of data and information on the tropical forest cover in the world. It provides accurate and updated information on the state of the tropical forest ecosystems and on the forest fires.
- *The Biotechnology Information System (BIOSAFE)*, to support EU legislation on the contained use, deliberate release into the environment, and risk assessment of genetically modified organisms.

- *European Integrated Pollution Prevention and Control Bureau (EIPPCB)*, to support EU legislation for the integrated prevention and control of pollution from major industrial facilities based on the "best available techniques" concept.

(Communication from the Commission to the Council and European Parliament, COM(97) 733, final).

- *The Major Accidents Hazards Bureau (MAHB)*, dedicated to scientific and technical support for the control of major industrial hazards and the prevention and mitigation of major accidents, and including the Major Accident Reporting System data-base and the Community Documentation Centre on Industrial Risk.

(Communication from the Commission to the Council and European Parliament, COM(96) 7, final).

- *Monitoring of Agriculture with Remote Sensing (MARS)*, to support the Common Agriculture Policy with a set of statistical methods adapted to various objectives at EU level, as well as verification and control of farmer's declarations implemented in the Member States.

(Council Decision of 14.11.1997, 94/753/EC).

- *JRC Reference Laboratory for Neutron Data*, dedicated to performing very high resolution neutron reference measurements, radionuclide metrology and low level γ -spectrometry, and the preparation and certification of primary radioactivity standards for research, medicine and industry.
- *JRC Reference Laboratory for Isotopic Measurements*, dedicated to performing primary isotopic measurements and the production of isotopic reference materials, metrology in chemistry, quality control for nuclear and environmental safeguards, international measurement evaluation programmes (IMEP, REIMEP), validation of instruments for medical diagnosis and authenticity of food, origin of illicit drugs.
- *JRC Centre for Reference Materials*, dedicated to the production of highest quality chemical, biological, clinical, industrial, environmental and nuclear Certified Reference Materials (CRMs), storage and marketing of CRMs, and the development of analytical reference methods for elements and their chemical forms, radionuclides and organic constituents.

FINANCIAL STATEMENT

1. TITLE OF OPERATION

Proposal for a Council Decision adopting an (EC) specific programme for research, technological development and demonstration to be carried out by the JRC ("Direct Action") for the European Community (1998 to 2002).

2. BUDGET HEADING INVOLVED

Subsection B6 - "Direct Action" part

Articles	B6-111	Staff (in part)
	B6-121	Resources (in part)
Title	B6-2	Direct operating appropriations

3. LEGAL BASIS

Article 130i of the EC Treaty

European Parliament and Council Decision No ... of ... concerning the Fifth Framework Programme of the European Community for research, technological development and demonstration (1998-2002) (OJ No L ..., ..., p. ...).

4. DESCRIPTION OF OPERATION

4.1 General objective of the operation

The JRC's mission is to provide scientific and technical support for the formulation, implementation and monitoring of EU policies. As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union. Close to the policy-making process, it serves the common interest of the Member States while remaining independent of commercial or national interests.

Technological progress is changing the way we live, the way we do business and the world we live in. These changes are complex and inter-related, so those involved with policy need support in understanding how to harness technologies to provide better services to citizens, allow industry to capitalise on new opportunities and promote policies that protect citizens from the risks that accompany the benefits of such changes. As the scientific arm of the Commission, the JRC must be able to underpin the EU policy making process by: facilitating a better understanding of emerging issues; providing scientific and technical support for the framing and implementation of policies; providing realistic monitoring of the effectiveness of policy measures.

4.2 Period covered by the operation

1998 to 2002

The arrangements for renewal of the operation are provided for in Article 130i of the EC Treaty.

5. CLASSIFICATION OF EXPENDITURE REVENUE

5.1 NCE.1. Compulsory/Non-compulsory expenditure

5.2 DA.2. Differentiated/Non-differentiated appropriations

5.3 Type of revenue involved

Certain Associated States will contribute to the financing of the specific programme by means of supplementary appropriations.

In accordance with Article 27 of the Financial Regulation, certain revenue may be available for re-use.

6. TYPE OF EXPENDITURE OR REVENUE

Appropriations to cover the various means (see point 2 above) used to implement the activities set out in point 4. In principle, the activities carried out by the JRC under this specific programme are funded entirely by Community own resources.

The implementation arrangements for the specific programme are as follows:

6.1 Direct RTD actions

The direct RTD actions will comprise RTD projects carried out by the JRC and accompanying measures such as those indicated in Annex III to the specific programme.

7. FINANCIAL IMPACT

7.1 Method of calculating total cost of operation

The amount deemed necessary is ECU 815 million for the period from 1998 to 2002.

The total cost of the proposed programme is as provided for the JRC in the proposal for a framework programme for 1998-2002 referred to in point 3 above. This amount covers all scientific, technical and exploitation activities and their proportion of the expenditure in respect of the various sites and infrastructure of JRC institutes. The breakdown of the overall amount between the various activities, as set out in point 7.2 below, has been made taking account of the following:

- a forecast of staff expenditure based on medium-term economic development in the Member States which host the various JRC sites;

- a forecast of general and scientific and technical support expenditure under the same conditions;
- an evaluation of the operating appropriations needed to implement the research programmes (direct expenditure on operation, equipment and contracts) and for JRC participation in indirect actions carried out under other specific programmes.

7.2 Itemised breakdown of cost

	TOTAL
SERVING THE CITIZEN	39,39%
ENHANCING SUSTAINABILITY	43,56%
UNDERPINNING EUROPEAN COMPETITIVENESS	17,05%
TOTAL	815 MECU ^(*)

^(*)of which approximately 6% may be allocated to exploratory research

7.3 Operational expenditure included in Part B of the Budget

Administrative expenditure is covered by headings B6-111 staff and B6-121 resources.

For its activities as a whole in 1999 (both nuclear and non-nuclear), the Joint Research Centre provides for a list of posts totalling 2 080 (729 A, 662 B, 650 C and 39 D).

7.4 Indicative schedule of appropriations

The schedule is established on the basis of the breakdown of the maximum overall amount and the indicative schedule of appropriations for the period 1998-2002 as set out in the proposal for the 5th framework programme.

Commitment appropriations		Payment appropriations				
		1999	2000	2001	2002 and subsequent years	Total
1999	200 000	159 980	30 732	9 288		200 000
2000	195 600		160 707	26 649	8 244	195 600
2001	206 200			167 579	38 621	206 200
2002	213 200				213 200	213 200
Total	815 000	159 980	191 439	203 516	260 065	815 000

The final amounts will be laid down by the Budgetary Authority.

8. FRAUD PREVENTION MEASURES

Internal audit and control programme in respect of scientific and budgetary aspects, to be carried out by the JRC staff responsible; internal audit carried out by the Financial Controller; local inspections by the Financial Controller and the Court of Auditors.

9. ELEMENTS OF COST-EFFECTIVENESS ANALYSIS

9.1 Specific and quantified objectives; target population

The JRC programme forms part of the framework programme, which meets the objectives set out in the Treaty on European Union, and in particular article 130f(1)

The JRC's participation in the fields of action covered by this proposal is commensurate with its capabilities and attributes and complies with the principle of subsidiarity.

The target population is Europe's scientific and industrial community and that concerned with the various sectoral policies of the Commission in which the JRC is required to provide its support as Direct Action. An overall concern for the European citizen is apparent throughout the programme.

The specific programme revolves around three main areas:

a) Serving the citizen

The first theme of JRC research focuses on the European citizen. The objective is to support those EU policies that are intended to protect citizens, provide them with information, maintain their health and protect their safety. The main objectives of consumer policy are to protect consumers in the internal market; reinforce market transparency; improve consumer confidence, especially by fuller and more effective information and education; develop a system of dialogue and consultation between the European Commission and consumer organisations, and improve dialogue between the latter and industry; and ensure that consumer interests are given due consideration in the development of other EU policies. The JRC will provide scientific support for this policy. Research will focus on different issues, in particular:

i) Consumer Protection

Research to underpin the harmonisation and validation of methods for quality and safety analysis of feedingstuffs, food, beverages and consumer products; provision of references for determining food authenticity and origin, and for food labelling and the development of anti-fraud techniques; detection of genetically modified organisms; toxicological studies on the impact and health effects of various food contaminants, toxic chemicals and pathogenic micro-organisms; and validation of safe alternative procedures to the *in vivo* experiments currently used to determine the toxicological hazards posed by chemicals, pharmaceuticals and consumer products.

ii) Medical and Health Applications

Application of several JRC-generated technologies related to nuclear engineering, metrology, information-processing and material sciences (e.g. cancer therapies, validation of testing methods for

bio-compatible materials and bio-mechanical components; qualification of medical equipment for the harmonisation of norms and standards, reference materials for clinical diagnostics and telematics systems for the secure exchange of regulatory information on pharmaceuticals in the EU).

iii) Benefit from the Information Society

The JRC's information technology expertise will be used to support the European dependability initiative as well as anti-fraud measures.

iv) Safety of the citizen: man-made hazards and natural hazards

Research will seek to protect individuals against hazards, and will tackle topics including support for EU industrial safety regulations and safety in the workplace, chemical products, civilian land demining and the fight against illicit drugs. In addition, studies will be carried out on the structural safety of transport vehicles; in-flight incidents; construction standards (Eurocodes) to ensure safety and reliability of buildings and civil engineering structures; research on natural hazards will focus on applications of Earth observation techniques for risk and damage assessment, monitoring and post-crisis management of natural hazards such as forest fires, floods, landslides, droughts, and coastal storms.

b) Enhancing sustainability

Technological development, sustainable growth, respect and care for the environment are key issues for the Union, enshrined in the Treaty and pursued through common policies and actions. In particular, the Community's Fifth Environmental Action Programme (1992-2000) forms the basis of EU environment policy and describes the attainment of sustainable development as the challenge of the 1990s.

The JRC's scientific and technical services will provide the necessary expertise to help understand the issues involved and support the implementation of the action programme, including the establishment of sound and feasible limits for pollutants, the production of commonly accepted reference materials and measurements for monitoring them, determination of the impact of proposed legislation, identification of best available technologies and assessment of available scientific knowledge for improving industrial processes and reducing pollution, understanding of global climate change processes and their impact, identification of new technologies that could affect sustainability, particularly in the energy and transport sectors.

Research priorities will include:

i) Socio- and techno-economic studies to improve the integration of environmental protection in sectoral EU policies; studies on land cover, land use dynamics, and coastal zone management.

ii) As regards pollution prevention and control, JRC activities will support environmental legislation for integrated (e.g. water, air, soil) pollution prevention and control in industry, the international harmonisation of pollution monitoring techniques, the harmonisation and validation of reference methods for the analysis of water (including development of techniques for localising soil contamination caused by industrial and military activities and marine pollution events) and the harmonisation and validation of air-quality control methods and criteria for air-quality in urban and con-urban areas.

iii) Global Change - By signing the Kyoto Protocol, industrialised nations have committed themselves to reducing greenhouse gas emissions. The JRC will provide the strong technical support needed in order to maintain the EU's credibility as a Party to the Climate Convention, strengthen its position on the international scene and formulate appropriate policy. The JRC will support EU policy

by studying fluxes of greenhouse gases and aerosols and through the exploitation of Earth observation for mapping, monitoring and making an inventory of key global, marine and terrestrial resources.

iv) Energy and transport - Final consumption of energy in Europe divides almost equally between industry (29%), transport (32%) and the household and tertiary sectors (39%). The majority of this is from fossil fuels. Only by effective measures to reduce emissions and replace fossil fuels with renewable energies can Europe respect international agreements and achieve sustainable growth. The JRC will support EU policy through: integration of renewable energies in energy systems, norms and standards for photovoltaic, solar thermal systems, energy-storage systems, fuel cells and insulation materials; other priorities will include reducing emissions and improving the cost effectiveness of high efficiency power generation systems (contribution to the development of new norms and standards); provision of neutron reference data for energy production in the framework of international conventions, and development and validation of new emission control and reduction technologies for land, air and sea transport systems.

v) Agriculture, rural development and fisheries - EU policy priorities are to make agriculture more competitive in world markets, to give new priority to sustainable rural development, consumer-friendly products and prepare for the Eastwards enlargement. The JRC will continue to play an active role in supporting policy through: prospective techno-economic studies and scenarios to support better understanding of long-term trends of policies related to the food chain and to regional development; studies on the evolution of the rural environment; development of agro-meteorological models to predict crop yields, antifraud measures and support for the implementation of a reliable animal identification and labelling system; in addition the JRC will undertake the development and production of certified reference materials and the development of reference methods for securing the quality of agricultural products.

c) Underpinning European competitiveness

The EU's primary contribution to economic development, growth and job creation is the promotion of an efficient internal market in all products and services. The EU negotiates trading agreements with third countries to ensure fair market access for EU products and stimulate economic growth. Fair trading depends on internationally agreed standards and the JRC will continue to support the promotion and development of soundly based European and international norms, standards, codes of practice and reference tools.

Research will target *inter alia* the following issues:

i) Employment, technology and industrial competitiveness - Investigation of the technology, employment and competitiveness nexus, and analysis of factors limiting the development of less favoured European regions with a view to eliminating bottle-necks and improving competitiveness and employment.

ii) Normative support to the international trading system - Industries need predictable and reliable market access conditions before making the considerable investments needed for their penetration. There is also a need for all market operators to refer to well-established, verifiable and internationally accepted measurements, in order to ensure the transparency of market regulations and avoid unfair competition and unnecessary litigation. In pursuance of these objectives, the JRC will undertake: production of industrial certified reference materials, the development and performance of primary isotopic measurements and the production of isotopic reference materials in support of accreditation bodies and quality assurance systems and to realise traceability of chemical measurements; the development and validation of analytical reference methods for elements, radionuclides and organic constituents; and prenormative research in support of the development of measurement and testing standards for materials in emerging technologies.

iii) Innovation and technology transfer - The JRC will support efforts to understand the processes that control the transfer of knowledge from the research sector to the private sector and will take steps

to maximise the benefit of its own technology to industry. The work includes: studies related to Europe's innovation system; support for the development of a competitive and sustainable value-added Earth observation industry, and exploitation of the JRC's own results.

iv) Enlargement, pre-accession and international co-operation - The JRC will support the enlargement process by sharing its knowledge with scientists from future EU Member States, hosting their scientists and encouraging them to use its facilities and join its networks. It will promote their association with international measurement evaluation programmes and will develop the cooperation with Southern and Eastern Mediterranean Partnership countries. In addition, the JRC will develop a multidisciplinary database of harmonised and consistent geographical data for an enlarged European Union.

9.2 Grounds for the operation

Progress in technology, especially in the life sciences and information technology, is changing the way we live, the way we do business and the world we live in. These changes are complex and inter-related, so those involved with policy need support in understanding how to harness the technologies to provide better services to the citizen, allow industry to take advantage of new opportunities and promote policies that protect the citizen from the risks that accompany the benefits of such changes. As the scientific arm of the Commission, the JRC must be able to underpin the management of change by supporting the EU policy making process through: facilitating a better understanding of emerging issues; providing scientific and technical support for the framing and implementation of policies; providing realistic monitoring of the effectiveness of policy measures.

The two selection criteria for JRC activities are:

- Relevance to EU policies. An understanding of the policy agenda allows JRC research to be timely and support the formulation of policy where it is most needed.
- Subsidiarity. This has two aspects. Firstly the research must be in an area where EU involvement is appropriate and secondly it should be appropriate for this involvement to be through the JRC. Thus the JRC operates in such areas as cross-border issues, consumer protection and anti-fraud, where its unique pan-European identity provides added value.

This new specific programme is being proposed in accordance with the objectives of the framework programme, and following evaluation - in line with the SEM2000 initiative - of operations pursued over the last five years.

The said evaluation has shown that, all in all, programmes have attained their goals, particularly by having the JRC carry out a series of high-quality activities.

9.3 Monitoring and evaluation of the operation

9.3.1 Monitoring and evaluation of the specific programme

Each year, with the help of appropriately qualified independent experts, the Commission will assess the implementation of the specific programme, particularly in the light of the criteria set out in Article 4 of the research and training programme. It will, in particular, assess whether the objectives, priorities and financial resources are still appropriate to the changing

situation. Where appropriate, it will submit proposals to adapt or supplement the research and training programme, particularly in the light of Articles 5 and 6 of the specific programme.

In addition, before submitting its proposal for a sixth framework programme, the Commission will have high-level independent experts conduct an external assessment on the management of, and progress made in, Community actions carried out during the five years preceding the assessment, with particular reference to the general outlines, the scientific and technological objectives and the criteria set out in Article 3(2) of the specific programme. The Commission will communicate the conclusions of this assessment, along with its comments, to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions.

The Commission produces an annual report on the activities of the Joint Research Centre. It also produces an annual report on research and technological development and the dissemination of results, in accordance with Article 130p of the EC Treaty. These reports are sent to the European Parliament, the Council and the Economic and Social Committee.

10. ADMINISTRATIVE EXPENDITURE (PART A OF SECTION III OF THE COMMISSION BUDGET)

Not applicable.

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ISSN 0254-1475

COM(98) 305 Vol. II

DOCUMENTS

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15 16 01

Catalogue number : CB-CO-98-327-EN-C

ISBN 92-78-36341-3

Office for Official Publications of the European Communities

L-2985 Luxembourg