COMMISSION OF THE EUROPEAN COMMUNITIES

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Brussels, 23 May 1990

Proposal for a

COUNCIL DECISION

concerning a specific programme of research and technological development

in the field of Information Technology

(1990-1994)

(presented by the Commission)

CONTENTS

Proposal for a

COUNCIL DECISION

adopting a specific research and development programme in the field of information technology (1990-94)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 130q (2) thereof,

Having regard to the proposal from the Commission,(1)

In cooperation with the European Parliament,(2)

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

Whereas by its Decision 90/221/Euratom, EEC(4), the Council adopted a third framework programme for Community activities in the field of research and technological development (1990-94), specifying inter alia the activities to be pursued in the field of

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(1) OJ No C

(2) OJ No C

(3) OJ No C

(4) OJ No L 117, 8.5.1990, p.28.

information technology; whereas this Decision should be taken in the light of the grounds set out in the preamble to that Decision;

Whereas Article 130k of the Treaty stipulates that the framework programme is to be implemented through specific programmes developed within each activity;

Whereas an estimate should be made of the amount of Community financial resources needed to carry out this specific programme; whereas the definitive amounts will be fixed by the budgetary authority in line with the financial perspectives covering the period 1988 - 1992 included in the Interinstitutional Agreement of 29 June 1988[5] and with any future financial perspectives covering the period 1993 - 1994;

Whereas, pursuant to Article 4 and Annex I of Decision 90/221/Euratom, EEC, the amount deemed necessary for the whole framework programme includes an amount of 57 million ecus for the centralized dissemination and exploitation of results, to be divided up in proportion to the amount envisaged for each activity; whereas in view of the importance of this specific programme within the information technology and communications activities the estimate of the financial resources needed by this programme is to be reduced by 13.52 million ecus, which amount is to be allocated to the centralized activities, in order to comply with the second sentence of Article 130p (2) of the Treaty;

Whereas this programme must be implemented by the Commission; whereas to help accomplish this, the Member States are bound, pursuant to Article 5 of the Treaty, to facilitate the achievement of its tasks where necessary, notably within a committee;

Whereas this programme must be implemented essentially by the selection of research and development projects to enable them to benefit from Community participation; whereas the Commission should encourage the submission of such projects by the usual means of publishing calls for proposals in the Official Journal; whereas a special procedure should

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(5) OJ No L 185, 15.7.1988, p.33.

also be devised so as to maintain a degree of flexibility enabling the Commission, in the face of the continuous evolution and gradual acceleration of technological progress, also to take into consideration spontaneous proposals consistent with the objectives of the programme;

Whereas the projects to be carried out under the programme must be selected with special attention to the principle of economic and social cohesion in the Community, the transnational nature of the projects and the support to be given to small and medium-sized enterprises;

Whereas it is only in the light of experience gathered in the course of this programme that the Commission will be able to propose and the Council to adopt supplementary programmes by having recourse to the means provided for in Articles 130l, 130m or 130o of the Treaty, if they contribute to the achievement of the programme's objectives, in accordance with the option made available by Article 2(2) of Decision 90/221/Euratom, EEC;

Whereas, in accordance with Article 130g of the Treaty, the Community's activities aimed at strengthening the scientific and technological basis of European industry and encouraging it to become more competitive include promoting cooperation on research and technological development with third countries and international organizations; whereas such cooperation may prove particularly beneficial for the development of this programme;

Whereas Information Technology pervades throughout the economy and society, improves decisively the competitiveness of industry and services, as well as easing working conditions and many aspects of private life; whereas Information Technology requires important efforts in research and development calling for transnational cooperation; whereas Microelectronics, Information Processing Systems and Software, Office and Home Systems, Computer Integrated Manufacturing and related Basic Research have been identified as priorities in Decision 90/221/Euratom, EEC.

Whereas the Scientific and Technical Research Committee (CREST) has been consulted,

HAS ADOPTED THIS DECISION:

Article 1

A specific research and technological development programme for the European Economic Community in the field of information technology, as defined in Annex I, is hereby adopted for a period of five years as from 1 January 1990.

Article 2

1. The Community funds estimated as necessary for the execution of the programme under this Decision amount to 1352 million ecus. Of this amount 13.52 million ecus is drawn for the centralized dissemination and exploitation of results. The amount thus reduced to 1338.48 million ecus includes staff costs which may not exceed 4%. An indicative breakdown of expenditure is set out in Annex II.

2. Should the Council take a decision in implementation of Article 1(4) of Decision 90/221/Euratom, EEC, this Decision shall be adapted to take account of the above-mentioned decision.

3. The budgetary authority shall decide on the appropriations available for each financial year.

Article 3

Rules for the implementation of the programme are set out in Annex III.

Article 4

The rate of the Community financial contribution shall be laid down in accordance with Annex IV to Decision 90/221/Euratom, EEC.

Article 5

1. During 1992 the Commission shall review the programme and address a report on the results of the review to the Council and the European Parliament, together with proposals for any necessary changes.

2. At the end of the programme the Commission shall assess the results obtained. It shall address a report thereon to the Council and the European Parliament.

3. The reports shall be drawn up having regard to the objectives set out in Annex I to this Decision and in accordance with Article 2(4) of Decision 90/221/Euratom, EEC.

Article 6

1. The Commission shall be responsible for the execution of the programme. It shall be assisted by a committee, hereinafter referred to as "the Committee", composed of representatives of the Member States and chaired by a representative of the Commission.

2. The contracts concluded by the Commission shall govern the rights and obligations of each party, including the procedures for disseminating, protecting and exploiting the research results, in accordance with the arrangements adopted pursuant to the second paragraph of Article 130k of the Treaty.

3. A work programme for each year shall be drawn up and updated where necessary. It shall set out the detailed objectives and type of projects to be undertaken, and the financial arrangements to be made for them. The Commission shall make calls for proposals for projects on the basis of the annual work programmes.

Article 7

1. In the cases envisaged in Article 8(1), the Commission representative shall submit to the Committee a draft of the measures to be taken. The Committee shall deliver its opinion on the draft within a time limit which the chairman may set according to the urgency of the matter. The opinion shall be delivered by qualified majority as provided for 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 Member States' representatives within the Committee shall be weighted in the manner set out in that Article. The chairman shall not vote.

2. The Commission shall adopt the measures envisaged where they are in accordance with the Committee's opinion.

3. If the measures envisaged are not in accordance with the Committee's opinion, or if no opinion is delivered, the Commission shall forthwith submit to the Council a

proposal relating to the measures to be taken. The Council shall act by a qualified majority.

4. If the Council has not acted within one month of submission of the proposal, the proposed measures shall be adopted by the Commission.

Article 8

1. The procedure laid down in Article 7 shall apply to:

   - the preparation and updating of the work programmes referred to in Article 6(3);

   - evaluation of the projects referred to in point 2 of Annex III, as well as the estimated amount of the Community's financial contribution when these projects are submitted through the ordinary procedure referred to in point 4 of Annex III and the abovementioned amount is more than 5 million ecus;

   - evaluation of all projects submitted through the exceptional procedure referred to in point 4 of Annex III, as well as the estimated amount of the Community's financial contribution;

   - measures for evaluating the programme.

2. The Commission may consult the Committee on any matter falling within the scope of the programme.

3. The Commission shall inform the Committee with regard to;

   - the progress of the programme;

   - planned calls for proposals, referred to in Article 6 (3);

   - projects, referred to in point 2 of Annex III, submitted through the ordinary procedure, for which the Community contribution is less than 5 million ecus, and the results of their evaluation;

   - accompanying measures, referred to in point 2 of Annex III;;

   - concerted actions, referred to in point 2 of Annex III.

Article 9

In implementing this programme, supplementary programmes within the meaning of Article 130l, participation within the meaning of Article 130m and joint undertakings or any other structures within the meaning of Article 130o of the Treaty may also be decided on as the need arises.

Article 10

Where cooperation with third countries and international organisations aiming at achieving the objectives of this programme requires legal undertakings between the Community and the third parties concerned, the Commission shall be authorized to negotiate, in accordance with Article 130n of the Treaty, international agreements laying down the terms of such cooperation.

Decisions on the conclusion of such agreements shall be adopted in accordance with the procedure referred to in Article 130q (2) of the Treaty.

Article 11

This Decision is addressed to the Member States.

Done at Brussels,

For the Council,
The President

Annex I

Scientific and Technical Objectives and Content

The approach embodied in the third Framework Programme, the scientific and technical objectives and the underlying aims which it pursues, form an integral part of this specific programme.

Paragraph I.1.A of Annex II of the Framework Programme forms an integral part of this specific programme.

The following presents an analytical description of the content of the programme based on and taking account of the above elements.

The programme constitutes a new phase of the European Strategic Programme for Research and Development in Information Technology (ESPRIT), oriented towards the new generations of technologies.

The programme will be carried out in five areas:

Area 1: Microelectronics

Area 2: Information Processing Systems and Software

Area 3: Advanced Business and Home Systems; Peripherals

Area 4: Computer Integrated Manufacturing and Engineering

Area 5: Basic Research.

Accompanying measures comprise technology transfer and training activities carried out in each of the areas. They include special actions, which aim at increasing the potential for participation in Community R&D in Information Technology of organisations in peripheral regions and likewise their ability to make use of the results. They include acquisition of information both within the programme and from the IT community at large, as well as measures to create awareness of opportunities and availability of results, and to develop synergies between participants and with the IT community at large. They also include the Information Exchange Systems for programme participants (IES) and participation in the EUREKA project Cooperation for OSI Networking in Europe (COSINE). Specific information on projects will be provided in close cooperation with the Community R&D Information Service (CORDIS).

Area 1: Microelectronics

Emphasis will be on Application Specific Integrated Circuits (ASICs), including notably multi-function circuits, high speed circuits, optoelectronic circuits, advanced power circuits ("smart power"), new equipment, manufacturing technology and materials for integrated circuits and, in conjunction with other initiatives in the Community such as the Joint European Submicron Silicon project (JESSI), the advanced technologies linked to submicron silicon.

Work will be addressed to the major components of the chain of designing, manufacturing, testing and applying advanced semiconductor products. The activities will be organised so as to link users and producers, ensuring the participation of a wide range of actors to the benefit of all. It will address the complete set of technologies that are needed to produce new generations of integrated circuits (ICs), on the basis of the work carried out under ESPRIT in process technologies, Computer Aided Design (CAD) and Computer Aided Testing, and by taking up newly emerging topics.

An essentially new topic is Manufacturing Science and Technology. Work in this area will aim to improve the manufacturing capability of European IC industry by addressing all the aspects that are necessary to achieve higher quality low cost ICs. This includes R&D in equipment engineering, automation, clean room technology and quality control.

The following topics will be regarded as priorities: equipment for semiconductor processing, covering the most demanding technological steps (lithography, layer processing and metrology in particular); packaging and connectivity (comprising electrical and optical solutions); advanced materials, addressing silicon-related films and compound semiconductor (especially III-V) materials, the latter being of crucial importance for the further development in optoelectronics and high speed integrated circuits.

With respect to IC technology, both higher density and higher speed circuits will be pursued as well as integrated systems of increased performance and reduced size and cost leading to the "system on a chip".

Work in high density ICs will centre on 0.5-0.3 micron silicon (Si) complementary metal oxide semiconductor (CMOS) technology. In addition to the actual lithography and other semiconductor process and material technologies, CAD tools and systems capable of designing and testing at higher complexity levels (between 4 and 8 million transistors of mixed memory and logic) will be developed. Work on high density ICs will be carried out in conjunction with JESSI.

Work in high speed ICs will address both silicon bipolar and III-V technologies for digital and analog circuits. The work includes semiconductor technology and materials and specific aspects of design and testing of high speed ICs (for instance for high frequency digital ICs).

Work will progress towards the "system on a chip" through the development of flexible processes that allow the combination of various features such as digital and analog functions, non-volatile memory, low voltage, power switching and sensors onto one chip. Such features will be integrated into a standard submicron digital CMOS process. The increased process complexity requires special measures to achieve sufficiently high yields. Special CAD tools which are, for example, capable of simulating the different functions on the chips, are also required.

Technology transfer, training and other accompanying measures will be undertaken where there is a specific need for action; special emphasis will be put on prenormative work on a standard CAD framework with interfaces allowing for an effective integration of CAD systems. Measures to tackle specific skills deficits that can only be addressed in cooperation with industry (for instance, those that require access to industrial facilities) will be undertaken. Measures to promote uptake of ASIC technology in innovative products, especially by small and medium-sized enterprises (SMEs), will also be undertaken.

Area 2: Information processing systems and software

Concurrent architectures are seen as the key to future breakthroughs in the cost/performance ratio of computers. Work in this area will lead to a minimal set of machine architectures needed to satisfy selected target applications with around 10^5 computing elements. Concurrent systems will improve systems reliability and security. The work will include advanced experiments to validate selected parallel architectures. It will take the requirements of distributed computing and of real-time applications into account. It will, in particular, concentrate on tightly coupled and homogeneous systems. Operating systems allowing information sharing between existing systems and newly emerging parallel operating systems will be addressed. Technical and scientific workstations with very high performance will be based on parallel architectures.

Future generations of computers will not only need better and more reliable performance, they will also need better interfaces, especially man-machine interfaces. Efforts will be undertaken aimed at establishing provision of user interface management tools, as well as multi-lingual intelligent objects in a distributed operating environment. Stress will be placed on systems for the perception and synthesis of information from highly complex signals. These concern, in particular, human speech recognition and image understanding.

In the majority of IT systems the software component is now seen as the dominant element of cost. Constraints in European *software* production capabilities are now seen as the most critical problem for the IT industry. Tools and methods to support systems integration and to increase software productivity will be enhanced where significant progress can be expected. The work will build on existing or emerging standards. Particular attention will be paid to portability of software, re-usability and design of standardised modules. Renewed emphasis, concentrating particularly on the transfer of modern design methods into common use, will be given to improving productivity, quality and security. Industrialisation of software engineering tools and environments will be encouraged by the demonstration of applications. This work includes the industrialisation of knowledge engineering techniques, in particular as complements to existing conventional systems engineering techniques.

Measures will be undertaken to promote the take up of new software production technologies and to increase skill levels on a broad scale. This will include training oriented to industrial needs. These measures will build on the results of projects under ESPRIT, EUREKA and Member States' programmes concerned with the provision of industrial methods and tools.

Area 3: Advanced Business and Home Systems; peripherals

Advanced Business and Home Systems will aim for function integration in the business environment as well as in the home environment. It will also aim at easing the use of systems. An especially high priority will be given to prenormative work. Distributed computing including data base management, the corresponding workstations and microprocessor systems and technologies will be of major concern throughout the activities. The work in distributed computing will, in particular, concentrate on loosely coupled and heterogeneous systems. Systems assurance experiments will be carried out, as appropriate. In this context, the integration of tools and facilities in specific applications of real user interest will be demonstrated, as well as the integration of different streams of activity leading to more efficient data flow across organisations.

Two complementary, but interrelated areas are addressed.

R&D work on *integrated business systems* addresses the information flow across departments and sites within an enterprise and enables the close integration of various activities between functional units. It includes the integration of mobile terminals into business information systems. In this context, systems for cooperative work play an important role. They allow cooperation through the provision of, e.g., the following

facilities: cooperative writing, file processing, project management, decision making, informal interaction, problem definition and conferencing. The improvement of working conditions and job-level qualifications are of major concern.

The R&D activities concerning *intelligent homes and intelligent buildings* are partially similar to those concerning integrated business, but obey different boundary conditions concerning functionality and cost. They aim at integrating IT with other building functions such as security, privacy, voice and document communication, heating, lighting and energy management. Requirements analysis, functional specifications and prenormative work include various aspects of quality of life such as ergonomy and improvement of working conditions.

In the context of business and home systems, *peripherals* are taking on increasing importance. The objective of R&D work in peripherals is to reinforce the scientific and technological bases for new generations of peripherals, which are reliable, cheap and capable of being produced in large quantities. In order to contribute to the renewal of a European industry in the field of components and sub-assemblies for peripherals through R&D, synergies between producer and user industries need to be established, and a critical mass must be reached.

The peripherals technology activities include R&D aspects of specific peripheral technologies for printers, displays, input and storage devices. Special emphasis will be put on flat panel display technologies, magneto-optical storage systems, non-impact printing technologies, and scanning technologies.

Specialised technology transfer and training measures in the field of integrated business systems include demonstrations of advanced IT solutions suited, in particular, for small enterprises.

Area 4: Computer integrated manufacturing and engineering

The activities aim at providing the technology base for open systems, multivendor systems and distributed operations in engineering and manufacturing environments as well as to contribute to better integration of advanced IT systems components in engineering industries. The work will focus on new generations of basic CIM technologies and on demonstrating their applicability in selected manufacturing and other engineering domains. Synergy with the specific programme on industrial and materials technologies foreseen in Decision 90/.../Euratom, EEC will be assured.

R&D work will include Technological Infrastructure and Application Experiments. Technological Infrastructure work will involve the development of the advanced CIM techniques, methods and tools to facilitate manufacturing and engineering applications within the different domains where IT is of particular strategic importance. Aimed at improving cost-efficiency, flexibility and high quality, the approach will be based on open systems concepts supported by appropriate prenormative work, and will recognise the multi-site, multi-supplier nature of most engineering enterprises. Topics include logistics and distribution, communications and architectures for engineering applications, the management of industrial processes, engineering design, robotics and equipment technologies (control and instrumentation), mechatronics and microsystems. On-line quality assurance technologies will be developed to ensure safe and reliable operation of products and processes throughout their total life cycle.

Building on the results already achieved in ESPRIT, new engineering test-beds will be addressed. Vendor industries involved include system integration and software houses, manufacturers of computers and communications equipment, machine tools, robots, autonomous vehicles, cranes, electronics, control and instrumentation, sensors and actuators. Work will be geared to serve the small and medium sized users, who form the majority of all engineering enterprises, as well as the large users who lead the field in the application of high technology. Collaboration between users and vendors will continue to be strongly encouraged.

Application experiments to validate advanced IT solutions will be carried out in discrete parts manufacturing, process industry applications, mass manufacturing, and other engineering applications. Attention will be paid to cleaner industrial operations.

The existing profile of human resources in this domain does not yet match the demands of the advanced manufacturing and engineering industries and this will limit progress if not swiftly addressed. Technology transfer and training activities will be most effective if there is a multi-disciplinary approach, if users are strongly involved, and if they are closely coupled with the R&D activities, in some cases actually as part of major projects. Specifically tailored education and training actions will include the possibility to involve students and young graduates in demonstrator projects.

Area 5: Basic research

Basic research actions contribute to maintaining and expanding the knowledge and expertise which underpin the scientific basis of European Information Technology. Areas that such actions support are selected on the grounds of:

- Their potential to produce future breakthroughs or important advances even if they have no immediately visible application.

- Their ability to benefit from the added value which cooperation on a European scale provides.

- Their positioning clearly upstream of R&D efforts, while contributing to the overall aims of the programme.

- The reinforcement of interdisciplinary links.

Research is planned for the achievement of low noise and high speed elements through the use of low temperatures and by incorporation of new high temperature superconductivity materials. The need for ultra high complexity components, which will build the hardware base for future massively parallel systems, will lead to research in the nanometre scaling of electronic circuits. This includes investigations of physical properties of organic and of optical materials with high potential for application in IT devices and systems. Synergy with activities in material research carried out in the specific programme on industrial and materials technologies foreseen in Decision 90/.../Euratom, EEC will be established. The research of future hardware possibilities will be complemented by activities on the new generation of hardware design methodologies.

Breakthroughs needed for the effective and efficient software engineering of the future, and to some extent of computing systems generally, will be predicated on the strengths of the formal description of systems. Therefore the logical and algebraic foundations of computer science will be addressed providing the necessary framework for the development of concurrent systems, specification and verification techniques, as well as the next generation of programming languages and algorithms. With the target of enabling reliable distributed systems, basic research will be encouraged on dependable distributed systems and integrated data bases.

Still existing constraints in the foundations of artificial intelligence are limiting the necessary improvements in many application areas where a change from currently available dataprocessing and networking to more intelligent systems and procedures is required. To help overcome this, basic research will be addressed to massive parallelism, neurocomputing and other critical issues in this field which include the handling of uncertainty and knowledge representation, theories of automated manufacture and human-computer interaction.

These measures in technology transfer and training aim at establishing and maintaining close links with the industrially-oriented activities within the programme.

In the context of basic research, the growing problem of skill shortages will be addressed in universities and research centres. Both technology transfer and training demand the emergence of European centres of excellence in different areas of IT. Basic research is uniquely positioned to play an important role in meeting this demand by acting as a catalyst for the emergence of such centres of excellence.

Annex II

Indicative Breakdown of Expenditures

in %, for the period 1990-1994.

Area 1.	Microelectronics	27 - 31
Area 2.	Information processing systems and software	23 - 27
Area 3.	Home and business systems; peripherals	15 - 19
Area 4.	Computer integrated manufacturing and engineering	17 - 21
Area 5.	Basic research	9 - 11

The breakdown between different areas does not exclude the possibility that projects could cover several areas.

Annex III

Rules for Implementing the Programme and Activities for Dissemination and Exploitation of the Results

1. The Commission shall implement the programme on the basis of the scientific and technical content described in Annex I.

2. The rules for implementing the programme, referred to in Article 3, comprise research and technological development projects, accompanying measures and concerted actions.

   The projects shall be the subject of shared-cost research and technological development contracts.

   The accompanying measures consist of applying the means to ensure proper technical execution, management and evaluation of the programme, as well as adequate dissemination and accessibility of the results, and coordination, training and consciousness-raising of the participants in the programme.

   The concerted actions are those defined in the Financial Regulation.

3. The participants in the projects must be natural or legal persons established in the Community[6], such as universities, research organizations and industrial firms, including small and medium-sized enterprises, or associations thereof, in particular European Economic Interest Groupings (EEIGs).

   Natural or legal persons established in countries which have concluded agreements with the Community foreseeing scientific and technical research, may, based on the criterion of mutual advantage, take part in the projects undertaken in the context of this programme. The contracting parties under such arrangements shall not benefit from Community funding. They shall contribute to the general administrative costs.

4. The choice of projects shall be carried out according to the following order of priority, the first method being the rule, the second the exception:

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(6) For the purposes of this programme, the European Centre for Nuclear Research (CERN), whose headquarters are in Geneva and most of whose installations are on Community territory, may be a party to the contracts.

The participants in the projects shall be selected on the basis of the ordinary procedure of calls for proposals referred to in Article 6 (3) and published in the Official Journal of the European Communities.

The Commission may also accept proposals according to an exceptional procedure and under the conditions mentioned below, when they make a particularly promising and significant contribution as regards the originality of the theme proposed, the novelty of the scientific and technical approach and the methodology of execution, also taking into account the particular nature of the proposers.

A favourable technical evaluation of such proposals shall not by itself be a sufficient justification for accepting a project; this exceptional procedure may only apply after verification that the nature of the project, as defined above, does not justify the use of the normal procedure for calls for proposals.

The exceptional procedure must be completed before the ordinary procedure in such a way that the available amount for the Community's financial participation in projects retained by the ordinary procedure can be determined precisely. The closing date for the exceptional procedure shall be published each year in the Official Journal.

The amount of the financial participation of the Community for all the projects retained by the exceptional procedure will be decided each year, in relation to the projects selected according to particularly strict criteria of excellence. In any case, this amount may not exceed 15%; it may be revised each year in the light of experience.

The Commission shall draw up a vade mecum setting out all the rules applicable to this exceptional procedure in order to guarantee full transparency.

5. The projects must involve at least two mutually independent partners established in different Member States.

6. The Commission may encourage the participants to form a European Economic Interest Grouping (EEIG) or make other arrangements for carrying out projects, such as those on a large scale, permitting decentralized management adapted to the specific requirements of the project.

7. The knowledge acquired during the course of the projects shall be disseminated on the one hand within the specific programme and on the other hand by means of a centralized activity, pursuant to the decision referred to in the third paragraph of Article 4 in Decision 90/221/Euratom, EEC.

FINANCIAL STATEMENT

1. BUDGET HEADING AND TITLE

Subsection 6, Item B 6111

Specific programme of Community RTD activities in the field of Information Technologies (1990-1994)

2. LEGAL BASE

Article 130 Q (2) of the Treaty.

3. OBJECTIVES AND DESCRIPTION

See Annex I of the proposal.

4. FINANCIAL IMPLICATIONS

Amounts deemed necessary in MioECU:

Programme implementation	1338.48
Centralised action for dissemination and valorisation	13.52
TOTAL	1352.00

The indicative internal breakdown of the 1338.48 MioECU for the programme implementation is given in Annex II of the proposal.

Indicative multiannual schedules

in MioECU	1990	1991	1992	1993	1994*	TOTAL
Commitments	-	345.00	195.26	512.00	286.22	1338.48
Payments	-	80.00	290.00	305.00	663.48	1338.48

* for the payment appropriations: 1994 and beyond.

The definitive yearly amounts will be determined by the budgetary authority in accordance with the financial perspectives for the period 1990-1992 (annexed to the Interinstitutional Agreement of 29 June 1988) and with subsequent financial perspectives which may be adopted for 1993 and 1994.

5. STAFF AND ADMINISTRATIVE EXPENDITURE

In addition to the principal means of action, which are contracts (annex III), the above amounts include programme-related staff and administrative expenditure estimated at no more than 94 MioECU.

The expenditure on staff will not exceed 4% of the amount deemed necessary for the programme implementation. This implies a maximum of 301 statutory posts (A, B and/or C) at any given time during the life of the programme. The infrastructure costs related to statutory staff will be borne by Part A of the budget.

6. IMPLICATIONS FOR REVENUE

The contributions by third country contractors towards the cost of administration of the programme will be reused pursuant to articles 27.2 and 96 of the Financial Regulation(1)

7. TYPE OF CONTROL

Control will be exercised by:

- the Programme Management Committee (scientific control)
- the services of the DG responsible for the execution of the programme, possibly assisted by independent experts
- the Commission's Financial Controller.

In accordance with Article 2 of the Financial Regulation(1), the use of appropriations will be subject to analyses of cost-effectiveness and the realization of quantified objectives will be monitored.

External audits may be carried out by the Court of Auditors in accordance with the Treaty.

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(1) Financial Regulation of 21 December 1977, as last amended by Regulation 610/90 of 13 March 1990.

Competitiveness and Employment Impact Statement

Subject: **Proposal for a Council Decision concerning a specific programme of research and technological development in the field of Information Technology (1990-1994)**

I Reason for Introducing Measure

The proposal is being submitted in order to implement the Information Technology part of the third Framework Programme of Community activities in the field of research and development (1990-1994).

II Features of the Businesses in Question

The proposal is of an industrial nature and is primarily directed to enterprises in Information Technology. This sector includes a large proportion of SMEs, which already participate in the ESPRIT Programme to a considerable extent. In fact SMEs participate in 80% of projects in the second phase of ESPRIT.

The businesses in question are spread throughout the Member States including regions which are eligible for regional aid and eligible under the ERDF.

III Obligations Directly Imposed on Businesses

The proposal confirms the principles of existing administrative procedures for participation in the programme and takes account of the continuous need for efforts in terms of encouraging industrial actors towards further transnational initiatives, including an increase of the potential for such cooperation of organizations in peripheral Member States.

There are no disadvantages to enterprises except for the additional costs, quite minimal, relating to the preparation of unsuccessful proposals.

IV Indirect Obligations Likely to be imposed on businesses by local authorities

None are envisaged.

V Special measures in respect of SMEs

The major advantage for SMEs is that all signatories to contracts are treated on an equal footing, so that even with a relatively small contribution to make, a contractor has the right of full access to and exploitation of results. SMEs participate in all technology areas of ESPRIT and in both large pre-planned projects and smaller more speculative projects. Their participation is far from secondary. 92 ESPRIT projects (25%) have SMEs operating as prime contractors.

With respect to the technical content of the Specific Programme, new increased emphasis will be given to areas such as software, computer integrated manufacturing and engineering which are particularly suited to SMEs because of their large presence and vital impact in these areas. Aside from the R&D activity per se, accompanying measures, some aimed specifically at SMEs, constitute an integral part of the current proposal.

VI Likely Effects on Competitiveness of Businesses and on Employment

The effects on competitiveness and employment (inasmuch as these can be measured) of R&D programmes such as the Specific Programme in IT are and will continue to be f an indirect and positive nature in the medium term. ESPRIT has so far permitted over 410 SMEs to participate in research and development, thereby enhancing their technological capabilities and their international market prospects. An independent high-level review of ESPRIT conducted in 1989 report that SMEs are positive about the effects of ESPRIT on their competitive position. Beneficial effects quoted include : improved access to markets, better understanding of international market needs, improved international marketing contacts, improved corporate image and acceptability to international customers. Without ESPRIT many SMEs would not have the funds available for significant research activity nor would they be able to benefit from international collaboration. The Programme is expected to offer to a considerable number of high-tech-oriented SMEs chances to participate in international projects.

VII Consultation of Industry

The proposal is the result of a broad consultation of representatives from Community industry and science. The proposal will be submitted to the Economic and Social Committee for opinion.