II

(Acts whose publication is not obligatory)

COUNCIL

COUNCIL DECISION

of 14 December 1987

on a Community programme in the field of telecommunications technologies — research and development (R&D) in advanced communications technologies in Europe (RACE programme)

(88/28/EEC)

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 the Community has as its task, by establishing a common market and progressively approximating the economic policies of Member States, *inter alia*, to promote throughout the Community a harmonious development of economic activities and closer relations between the States belonging to it;

Whereas the Heads of State and of Government, meeting in Stuttgart, Athens, Fontainebleau and Brussels, emphasized the importance of telecommunications as a major source for economic growth and social development;

Whereas the European Parliament, in its assessment of the situation and development of telecommunications, stressed the key role of telecommunications for the future political, social and economic development of the Community;

Whereas on 17 December 1984 the Council agreed on the main elements of a Community telecommunications policy in the field of advanced telecommunications services and networks involving actions at Community level;

Whereas, with the emergence of new services and the progressive convergence of telecommunications, data processing and wider public services, the trend is towards a Europe-wide integrated broadband network (Integrated Broadband Communications (IBC)) capable of supporting a wide range of customers and service providers;

Whereas developments in telecommunications will benefit the international competitiveness of the European economies in general and of the telecommunications industries in particular;

Whereas the option selected for advanced telecommunications technologies must be such that it does not increase regional disparities in the Community; whereas the development of common specifications for equipment and services is necessary but not sufficient to prevent further divergences in the regional development;

Whereas the development of IBC offers a wide range of opportunities for small and medium sized companies in the manufacture of equipment and in the provision of specialized services within the Community;

Whereas, in response to the requirement of using fully the economic and market potential of telecommunications, the Commission has submitted a programme of action which has been recognized by the Council as a base for further work;

(1) OJ No C 304, 28. 11. 1986, p. 2.
(2) OJ No C 281, 19. 10. 1987, p. 113. Decision of 18 November 1987 (not yet published in the Official Journal).
(3) OJ No C 68, 16. 3. 1987, p. 22.

Whereas cooperation in R&D and the development of standards can make a major contribution, notably by facilitating the evolution towards future IBC in terms of transnational connections and also at regional and local levels;

Whereas the 'Single European Act' provides a new political and legal base for the development of a scientific and technological strategy with particular importance being given to the goal of promoting industrial competitiveness;

Whereas the Research Council on 4 June 1985 recognized the importance of the rapid establishment of a definition phase for the RACE programme, in order to prepare a general European framework for the development of advanced systems of communications for the future and to promote technological and industrial cooperation;

Whereas the Council adopted by Decision 85/372/EEC [1] the RACE definition phase of 18 months on which to base the Decision for the main programme by the end of 1986;

Whereas, by Decision 87/516/Euratom/EEC [2], the Council adopted a framework programme of Community activities in the field of research and technological development (1987 to 1991) providing for research to be undertaken leading towards a large market and an information and communications society, including telecommunications;

Whereas the constitution or consolidation of a specifically European industrial potential in the technologies concerned is an urgent necessity; whereas its beneficiaries must be network operators, research establishments, undertakings, including small and medium-sized undertakings and other bodies established in the Community which are best suited to attain these objectives;

Whereas the RACE definition phase has produced the requisite conclusions;

Whereas the RACE Management Committee has carried out an assessment and called for the necessary decisions to be taken in time to ensure the follow-up of the work;

Whereas it is in the Community's interest to consolidate the scientific and financial basis of European research by means of the involvement to a greater extent of participants from European third countries in certain Community programmes and particularly in programmes involving cooperation in research and development of telecommunications technology;

Whereas consistency with ESPRIT is essential since both programmes benefit from each other;

Whereas it is essential to ensure consistency with Eureka, other European transnational cooperation and national actions;

Whereas during the RACE main phase numerous decisions may have to be taken which are extremely relevant to consumers, whether private individuals or businesses, such as those concerning the desired level of confidentiality and privacy of data transfer;

Whereas one fundamental concern which has emerged from the RACE definition phase is the need for attention to be paid to consumer-oriented aspects of future telecommunications services; whereas quality requirements and costs are associated problems in respect of which ongoing decisions will have to be made during the RACE main phase; whereas, therefore, the European Parliament should be kept informed of developments;

Whereas the implementation of concerted actions in the COST framework is an essential element to complement industrially-oriented R&D projects;

Whereas the Scientific and Technical Research Committee (CREST) has expressed its opinion;

Whereas, on the basis of results achieved, the programme may be extended for a second period of five years, following a proposal from the Commission,

HAS ADOPTED THIS DECISION:

Article 1

1. A Community programme in the field of telecommunications technologies (RACE) is adopted for an initial period of five years commencing 1 June 1987.

2. The programme is designed, in concertation with public and private actions in the field of telecommunications technologies, undertaken at national and international level, to promote the competitiveness of the Community's telecommunications industry, operators and service providers in order to make available to the final users, at minimum cost and with minimum delay, the services which will sustain the competitiveness of the European economy over the coming decades and contribute to maintaining and creating employment in the Community.

Article 2

The programme summary and objectives, as set out in more detail in Annex II, shall consist of three parts:

[1] OJ No L 210, 7. 8. 1985, p. 24.
[2] OJ No L 302, 24. 10. 1987, p. 1.

Part I: IBC development and implementation strategies

Shall comprise work required for the development of functional specifications, systems and operations research towards the definition of proposals for Open Systems-conformity (1) standards, concepts and conventions and analytical work serving the objective of establishing inter-operability for IBC (2) equipment and services. This work is to be carried out by appropriate organizations, groups and other bodies including, where required, contract work;

Part II: IBC technologies

Shall comprise R&D cooperation in IBC technologies at the precompetitive stage;

Part III: Prenormative functional integration

Shall comprise prenormative and precompetitive R&D relating to cooperation in the realization of an 'open verification environment' designed to assess functions, operational concepts and experimental equipment with respect to functional specifications and standardization proposals arising from the work in Part I.

Article 3

1. Projects relating to the programme shall be executed, where required, by means of shared-cost contracts. Contractors shall be expected to bear a substantial proportion of the costs, which should normally be at least 50 % of the total expenditure.

2. The proposals for projects shall, as a rule, be submitted in reply to an open invitation to tender and involve the participation of at least two independent industrial partners not all established in the same Member State. The invitation to tender shall be published in the *Official Journal of the European Communities.*

3. In exceptional cases concerning projects indispensable for implementing key requirements of the workplan:

— where a proposal would involve

  (i) unreasonable burdens on the participants, particularly small and medium-sized undertakings and research establishments,

  (ii) only one independent industrial partner,

  (iii) more than one independent industrial partner established in the same Member State, or

— where an open tendering procedure would be unjustified on grounds of cost or efficiency, or

— where the amount of the Community's contribution to the cost does not exceed 1 million ECU,

it may be decided, in accordance with the procedures laid down in Article 8, to depart from the general provisions set out in paragraphs (1) and (2) of this Article.

4. The contracts shall be concluded with network operators, research establishments, undertakings, including small and medium-sized undertakings, and other bodies established in the Community.

Article 4

Where framework agreements for scientific and technical cooperation between non-member European countries and the European Communities have been concluded, organizations and undertakings established in these countries may, in accordance with the procedures laid down in Articles 3 and 8, become partners to a project undertaken within the programme.

Article 5

1. The funds estimated as necessary for the Community contribution to the implementation of the programme amount to 550 million ECU over five years, including expenditure on a staff whose costs shall not exceed 4,5 % of the Community's contribution.

2. The internal and indicative allocation of these funds is set out in Annex I.

Article 6

1. The Commission shall ensure that the programme is properly performed and establish the appropriate implementation measures.

2. The Commission shall ensure that procedures are set up to allow for appropriate cooperation with COST activities related to the areas of research covered by the programme, by ensuring regular exchanges of information between the Committee referred to in Article 7 and the relevant COST Management Committees.

3. The Commission shall establish for each year and update as required a draft workplan defining the detailed objectives, the type of projects and actions to be undertaken and the corresponding financial plans. The Commission shall keep the European Parliament informed on progress of the annual workplans.

4. The procedure laid down in Article 8 shall apply to:

— the establishment and updating of the annual workplan referred to in paragraph 3 of this Article,

— any departure from the general conditions laid down in Article 3 (1) and (2),

— the evaluation of work undertaken in respect of each part of the programme by appropriate organizations, groups and other bodies,

(1) Open Systems-conformity stands for an international standardization effort to make equipment and services from different suppliers, operators and service providers inter-operable.

(2) IBC — Integrated Broadband Communication, which stands for advanced telecommunications services relying on high performance infrastructure.

— the assessment of proposed projects for the implementation of Parts I and III and the Community financial contribution for a project when this contribution is in excess of 2,5 million ECU,

— the assessment of proposed projects for the implementation of Part II and the Community financial contribution for a project when this contribution is in excess of 5 million ECU,

— the participation in any project by European organizations and enterprises not established in the Community.

5. The Commission may consult the Committee referred to in Article 7, and shall consult it at the request of the representatives of at least four Member States on any matter falling within the scope of this decision.

Article 7

The Commission shall be assisted in the performance of its tasks by a Management Committee, hereinafter referred to as 'the Committee'. The Committee, consisting of two representatives of each Member State, shall be set up by the Commission on the basis of nominations by the Member States.

Members of the Committee may be assisted by experts or advisors depending on the nature of the issue under consideration.

The Committee shall be chaired by a Commission representative.

The proceedings of the Committee shall be confidential. The Committee shall adopt its own rules of procedure. The secretarial services shall be provided by the Commission.

Article 8

1. Where the procedure laid down in this Article is to be followed, the Chairman shall refer the matter to the Committee, either on his own initiative or at the request of one of its members.

2. Under this procedure, the representative of the Commission, who acts as Chairman, shall submit to the Committee the draft of the measures to be adopted. The Committee shall deliver an opinion within a time limit which shall normally be one month and shall in no case exceed two months. The opinion shall be delivered by the majority specified in Article 148 (2) of the Treaty for decisions which the Council is required to adopt on a proposal from the Commission, the votes of the representatives of the Member States being weighted as indicated in that Article. The Chairman shall not vote.

3. The Commission shall adopt the intended measures when they are in accordance with the Committe's opinion.

Where the proposed measures 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. The Council shall act by qualified majority.

If the Council has not acted within a period of two months from the date on which the matter was referred to it, the proposed measures shall :

— be adopted by the Commission for matters falling under the third, fourth and fifth indents of Article 6 (4),

— be adopted by the Commission, save where the Council has decided against the said measures by simple majority for matters falling under the first, second and sixth indents of Article 6 (4).

Article 9

1. The programme shall be reviewed after 30 months on the basis of an evaluation of the results achieved in relation to the precise objectives set out in Annex II to this Decision. The Commission shall inform the Council and European Parliament of the results of this review.

2. After the completion of the first five-year period of the programme, the Commission shall, after consulting the Committee, send to the Member States and the European Parliament a report on the performance and results of the programme.

Article 10

With regard to the coordination activities provided for in Article 1 (2), the Member States and the Commission shall exchange all appropriate information to which they have access and which they are free to disclose concerning activities in the areas covered by this Decision, whether or not planned or carried out under their authority.

Information shall be exchanged according to a procedure to be defined by the Commission after consulting the Committee and shall be treated as confidential at the suppliers' request.

Article 11

This Decision shall apply from 1 June 1987.

Article 12

This Decision is addressed to the Member States.

Done at Brussels, 14 December 1987.

For the Council

The President

U. ELLEMANN-JENSEN

ANNEX I

INDICATIVE INTERNAL ALLOCATION OF FUNDS

	(Million ECU)
PART I: IBC DEVELOPMENT AND IMPLEMENTATION STRATEGIES	60
I.1. IBC strategies	14
I.2. IBC realization (Systems analysis and functional specification)	28
I.3. IBC usage	10
I.4. Common operational environment	8
PART II: IBC TECHNOLOGIES	332
II.1. Techniques for IBC systems functions	94
II.2. IBC programming infrastructure	49
II.3. Usability engineering	12
II.4. Technologies enabling network evolution	177
PART III: PRENORMATIVE FUNCTIONAL INTEGRATION	113
III.1. Verification tools	63
III.2. Development of IBC application pilot schemes	50
Personnel costs	25
Administrative costs	20
Total	550

ANNEX II

RACE PROGRAMME SUMMARY AND OBJECTIVES (1)

The goal of RACE is to make a major contribution to the objective of the:

'Introduction of Integrated Broadband Communication (IBC) taking into account the evolving Integrated Services Digital Network (ISDN) and national introduction strategies, progressing to Community-wide services by 1995'.

The general objectives of RACE are, in this light:

(a) to promote the Community's telecommunications industry so as to ensure that it maintains a strong position at European and world levels in a context of rapid technological change;

(b) to enable the European network operators to confront under the best possible conditions the technological and service challenges with which they will be faced;

(c) to enable a critical minimum number of the Member States of the Community to introduce commercially viable IBC services by 1996;

(d) to offer opportunities to service providers to improve cost-performance and introduce new or enhanced information services which will both earn revenue in their own right and give indispensable support to other productives sectors of the Community;

(e) to make available to the final users, at a cost and on a timescale at least as favourable as in other major western countries, the services which will sustain the competitiveness of the European economy over the next decades and contribute to maintaining and creating employment in the Community;

(f) to accompany the formation of a Community internal market for all IBC related telecommunications equipment and services based on agreed European or international standards as an indispensable basis for sustained strength on the world markets;

(g) to contribute to regional development within the Community with the support of the development of common functional specifications for equipment and services permitting the less-developed regions to benefit fully from the efforts of Member States piloting the telecommunications developments in the Community.

In order to achieve the objectives described, the RACE programme would be structured into three main parts with each project containing verifiable objectives to be met and reported on.

PART I: IBC DEVELOPMENT AND IMPLEMENTATION STRATEGIES

relating to the development of functional specifications, the systems and operations research towards the definition of proposals for IBC standards, concepts and conventions conforming to an open systems approach, and the analytical work serving the objective of establishing interoperability for IBC equipment and services.

PART II: IBC TECHNOLOGIES

covering the technological cooperation in precompetitive R&D addressing key requirements of new technology for the low-cost realization of IBC equipments and services.

PART III: PRENORMATIVE FUNCTIONAL INTEGRATION

relating to prenormative cooperation in the realization of an 'open verification environment' designed to assess functions, operational concepts and experimental equipment and applications with respect to functional specifications and standardization proposals arising from the work in Part I.

The corresponding work areas, tasks and approaches are specified in detail in the RACE workplan which is under preparation and will be submitted separately.

This work is to be carried out by industry, academics and telecommunication operators. The latter are expected to finance independently the work falling within their domain.

The following sections provide a description of the scope and nature of the work to be undertaken.

(1) The full RACE workplan is a detailed technical document which evolves with technological progress and Introduction of Integrated Broadband Communication (IBC) taking into account the evolving ISDN improved perception of the demand characteristics. Each year it is to be submitted for approval by the Management Committee.

PART I: IBC DEVELOPMENT AND IMPLEMENTATION STRATEGIES

Objectives

The main objectives of the work under Part I are to achieve, throughout the introduction and further enhancement of IBC:

— a common understanding of the evolution towards introduction of IBC and its implications including market research and promotion of the IBC concept and services in Europe and internationally,

— a common definition and understanding of the IBC system and subsystems, between all main actors concerned,

— guidelines for the functional specifications of the IBC system and the development of integrated services,

— a framework in which to identify the technology requirements and to assess the implications of technological advances and the evolution of service demands for the priorities in RD&E (Research, Development and Engineering),

— a tool for the evaluation of cost-effectiveness of various technological solutions, implementation schemes and evolutionary routes starting from the given situation,

— mechanisms for analysing and assessing, at an early stage, the requirements for standardization proposals and functional specifications in order to facilitate and accelerate the emergence of international standards.

Scope

To meet these objectives, Part I would comprise two major areas of activity:

— maintenance and further development of the European Reference Model for Integrated Broadband Communication, defined in its initial form during the RACE definition phase,

— systems analysis and engineering work to transform the concepts derived in the Reference Model into systems and subsystems and functional specifications.

I.1. IBC strategies

IBC is a broad field of activities which requires the dedicated work of many independent participants. They all need to be able to situate their respective work in the context of evolving objectives, conditions and rapid technological change and demand.

I.2. IBC realization

The Reference Model work of point I.1 represents a major concertation exercise to produce consensus views on the evolution towards IBC and its broad functional specifications for IBC systems, subsystems and services, and to provide a two-way link between the Reference Model and other RACE activities. The required systems analysis will be carried out under this point.

I.3. IBC usage

The economic impact of IBC will depend heavily on the nature of the applications supported by IBC networks, the modes of presentation to the users, the facilities available to users and other important parameters related to the ergonomy of telecommunications usage. This work area will concern these elements to the extent that they are related to work under I.1 and I.2.

I.4. Common operational environment

The convergence and transition to IBC represents a major problem in managing the complexity of the technical issues. This does require a specific effort which is the objective of the work under this heading.

PART II: IBC TECHNOLOGIES

Objective

The objective of this part is to carry out cooperative R&D on the key technologies required for low-cost-realizations of IBC equipment and services. In particular, success for the IBC depends critically on the cost of the local loop optical components being within affordable limits of domestic subscribers. This presents RACE with a key objective of providing the technology which in association with standization will reduce the costs in mass production by a factor of 100 over today's typical costs of comparable components. Part II will be system-driven and specifically related to the functional specifications derived by Part I.

Scope

The scope of the work will include the research, test and experimentation needed to explore the techno-economic characteristics of the new technologies relevant to IBC.

II.1. Techniques for IBC system functions

Objective

The use of advanced technology for cost-efficient implementation of IBC. The work will focus on functions which, due to their generalized use, form a key cost factor.

II.2. IBC programming infrastructure

Objective

Based on advances in software technology in general, as they result from fundamental work done elsewhere, the objective here is to realize major advance in telecommunication software infrastructure so as to master the complexity of systems integration and the associated requirements of network reliability and efficiency.

II.3. Usability engineering

Objective

The objective is to advance the technological aspects of man-machine interface and human factors so as to facilitate IBC user acceptance linked to ergonomy and cognitive facilities of IBC equipment.

II.4. Technologies enabling network evolution

Objective

The objective of the R&D is to exploit key enabling technologies to realize advanced evolutionary subsystems, systems and networks.

PART III : PRENORMATIVE FUNCTIONAL INTEGRATION

Objective

The work is aimed at the validation of standardization concepts and prenormative work as deriving from work done in other parts of RACE. The parts of the IBC system or subsystems will be tested by means of simulation of research-experimentation with particular reference to the needs of technological work in preparation of standardization proposals.

Prenormative functional integration serves several important functions. It will :

— permit the verification of concepts, standardization options, reliability, security, as well as other key functional characteristics by simulation and testing at the research stage,

— contribute to the reduction of risks for development and implementation by permitting the evaluation of the functional features by operators, industry and, where applicable, service providers and users,

— provide a mechanism for demonstrating interoperability features and compliance to standards and specifications.

Scope (1)

The scope of the work is to :

— test new technology, and devices from projects in Part II RACE, Esprit, relevant national programmes, international projects as an integral part of an IBC system to evaluate its functionalities and techno-economic performance characteristics,

— explore relevant performance parameters and confirm the feasibility of meeting the relevant requirements of the functional entities and applications as defined within Part I activities.

(1) The work envisaged within this part of the RACE programme is not expected to have the nature of demonstration projects or field trials. Such trials or prototype installations will be required before operational implementation of a harmonized set of IBC services can be undertaken but are beyond the scope and scale of effort under consideration for the RACE programme.

III.1. **Verification tools**

Objective

Work here is intended to develop verification tools related to make up operational IBC components or subsystems in order to verify design concepts, functional groups or protocols. The goal is to contribute to refinement of functional specification and/or verify standard proposals.

III.2. **Development of IBC application pilot schemes**

Objective

Early introduction of IBC services will require the diminution of the uncertainties and risks associated with new services. A key element to this is the early development of experimental situations where service providers, network operators and users are placed in conditions where IBC experimental products can be tested by users and service providers. The objective of the work in this area is to contribute to the development of such experimental situations and the exploitation of the results so as to speed up Community-wide understanding of the characteristics of IBC commercial exploitation.