

COMMISSION OF THE EUROPEAN COMMUNITIES

COM(76) 390 final.

Brussels, 21 July 1976.

PROPOSAL FOR A FOUR-YEAR PERIOD PROGRAMME 1977/1980 IN THE FIELD
OF SCIENTIFIC AND TECHNICAL EDUCATION

(submitted to the Council by the Commission)

COM(76) 390 final.

EXPLANATORY MEMORANDUM

The document annexed hereto is a proposal for a four-year programme on education and training for the period 1 January 1977 - 31 December 1980. In the nuclear sector, education and training programmes, based on Article 7 of the Euratom Treaty, have been conducted by the Commission since 1958.

The new proposed four-year programme is likewise based on Article 235 establishing the European Economic Community, since it advocates the extension of education and training activities to all research sections also in non-nuclear fields in which Community programmes exist. This extension is in the spirit of the Council Resolution of 14 January 1974 on the coordination of national policies and the definition of projects of interest to the Community in the field of science and technology.

C O N T E N T S

relating to a scientific training programme

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1. INTRODUCTION

1.1. General

The purpose of this proposal is to advance the scientific training programme, hitherto based on Article 7 of the Euratom Treaty, and to adapt it to the development of the common Research and Development policy.

The objective of the programme to date has been to promote the training of a new generation of Community scientific and technical staff, and more particularly the training and educational development of specialists in the nuclear field. To save setting up special Community training centres, the programme was based from the outset on the existing training centres in the Community countries, the main emphasis being laid on exchanges of students, scientists and engineers between the training establishments in one Member State and the research centres in another. It also had the advantage of enabling universities and research centres in different Community countries to establish links or to strengthen the existing ones between them.

1.2. Past programmes

Whereas the first programme (1958 - 1962) aimed primarily at giving students from the scientific faculties of universities in the Community countries the chance of gaining practical experience in a nuclear research centre in another Member State, the second five-year programme (1963 - 1967)

offered the further possibility, after graduation, of working in a research centre outside their own country for the purpose of Ph.D. research or interdisciplinary training. It was a scheme that was designed to give a broader postgraduate training to specialists in the nuclear sector.

In the next five years, from 1968 to 1972, there were only one-year programmes which did no more than continue these activities.

2. THE CURRENT PROGRAMME (1973 - 1976)

2.1. General

The current programme is the first of its kind to be approved as a Community programme within the meaning of Article 7 of the Euratom Treaty by nine Member States, instead of six as in the past. It was approved by the Council on 18 June 1973 as an indirect action programme for the period 1 January 1973 - 31 December 1976 with a maximum expenditure commitment of 4.5 million u.a. and a staff of eight.

2.2. Content

The aim of the programme was fourfold:

- to promote exchanges of young scientists and engineers between the teaching establishments in one Member Country and the research centres in another at all levels of training;
- to facilitate the free movement of young scientists and engineers during training, as well as that of the teaching staff;
- to promote interdisciplinary training;
- to encourage exchanges of scientists and engineers between research establishments and industry.

2.3. Implementation

The objectives of this programme were to be achieved by the following specific measures:

- a) the organization of in-service traineeships at the Geel, Karlsruhe, Ispra and Petten establishments of the Joint Research Centre, at which students from institutions of higher technological education would carry out the practical work specified in the curricula of their colleges;
- b) the awarding of grants for research leading to a diploma to be carried out at the establishments of the Joint Research Centre and presented at universities in the student's own country;
- c) the awarding of grants for postgraduate studies, either at the Joint Research Centre establishments or at national research establishments with which the Commission was associated under contracts for the implementation of indirect action projects. The grants would be used for:
 - Ph.D. research;
 - Specialization in a particular nuclear field through practical scientific research;
 - research by university research assistants or junior professors at nuclear research centres;
- d) the awarding of post-doctoral research grants for the purpose of further in-depth training, particularly in interdisciplinary fields;

- e) the organization at Community research centres of study-periods of variable duration for scientists and engineers who already had some professional experience.

Some data concerning the implementation of the current programme are given in the Annex to this document.

3. FUTURE PROGRAMME

3.1. Aims

The future training programme will no longer, as in the past, be used purely to promote in a general way a new generation of scientific and technical staff. Rather, the programme will take as its basis the Council Resolution of 14 January 1974 on the coordination of national policies and the definition of projects of interest to the Community in the field of science and technology and will be geared to those fields of research for which nuclear or non-nuclear research programmes have already been decided or will be decided at some future date under the Commission's new research and development policy. This programme constitutes an additional step with regard to the training of recruits and specialists in these particular fields of research and thus assumes a specific character in relation to the new Community research policy.

Furthermore, the programme will promote mobility at all levels of training within the Community's research and development programmes.

Lastly, the further training of scientists and engineers will be encouraged through support to courses in specialized fields relevant to the Community's sectoral policies.

3.2. Measures

3.2.1. Scope

This programme covers the JRC research programme (direct actions), all nuclear and non-nuclear research programmes (indirect actions) already decided and scientific and technical research programmes approved by the Council during the period of this programme.

3.2.2. Persons eligible

The persons eligible are students of science or scientists and engineers from the Member States holding diplomas and doctorates.

In view, however, of the close international links that exist in the field of science and research, it seems logical (within certain bounds) to admit, in addition, young scientists and engineers from non-member countries with which the Community has relations in the scientific and technological field. It seems appropriate that about 8 % of the total funds should be reserved for this purpose.

3.2.3. Categories of application

3.2.3.1. Grants

- a) Grants in respect of theses
- b) Grants in respect of doctorates
- c) Grants in respect of post-doctoral research projects.

As a general rule and in order to promote the desired mobility, scientific projects in the various areas of application for which grants have been awarded must be carried out outside the candidate's native country and, in the case of dissertations and theses, submitted in the candidate's country of origin.

3.2.3.2. Further training courses

Lastly, the training and further training of specialists is also to be encouraged through financial and organizational support for further training courses in sectors which are of special importance to the Community's research and development policy.

In this context, steps are to be taken to extend the agreement concluded between the Commission and seven universities and research establishments in five Community countries, under which further training courses in radiobiology lasting several weeks have been organized annually since 1973. Efforts are being made to increase the number of participating universities and research establishments so as to include all Member States.

Furthermore, plans are afoot, in collaboration with universities, research groups, industry and EDP users, to organize advanced short courses on data processing and its applications as a contribution, in the field of training and research, to the further development of data processing in the Community.

The Commission envisages a Community contribution of not more than 50 % to the total cost of the further training courses.

3.2.4. Setting-up of an Advisory Committee on Programme Management

For the purpose of implementing the new training programme, an Advisory Committee on Programme Management is to be set up to advise the Commission on the implementation of the programme in general and on the allocation of the available promotional funds in particular.

The Commission proposes that this Committee, consisting of two representatives from each Member State, should be made up as follows:

- one representative from a national organization responsible for the training of scientists and technologists and the promotion of such training;
- one representative from an Advisory Committee on Programme Management to which the scope of this programme is of concern, to be appointed in consultation with the Commission so as to ensure links with the greatest possible number of Advisory Committees on Programme Management.

3.3. Resources

3.3.1. Staff

For the purpose of implementing the programme during the period 1977 - 1980, the Commission needs a staff of seven officials composed as follows :

- 2 Grade A scientific officials
- 2 Grade B administrative officials
- 3 Grade C administrative officials

3.3.2. Appropriations

The Commission proposes that the existing upper limit for expenditure commitments be raised from 4.5 million units of account for four years to 5 million units of account for the same period. This increase of 0.5 million units of account for a four-year period is justified by the extension of the scope of the programme to non-nuclear areas. In view of this extension and the cost increases to be expected during the period of the programme, the proposed financial framework actually represents an overall reduction in those activities which are being promoted by the Community under the current programme.

Staff costs, general administrative costs (missions, fees to experts, meetings, etc.) and infrastructure (contribution to overheads) amount to 16.4 %, i.e., 0.82 million u.a. for four years. The remaining 4.18 million u.a. is available as funds deployable for the actual implementation of the programme. The following is an indication of the breakdown of these funds for the various areas of application:

Direct-action grants (35 %)	1.463 million u.a.
Indirect-action grants (35 %)	1.463 million u.a.
Grants in respect of non-member countries (8 %)	334 million u.a.
Advanced training courses (22 %)	920 million u.a.
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Total	4.130 million u.a.

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Proposed annual appropriations:

1977	1978	1979	1980	TOTAL
1.2	1.5	1.5	0.8	5.0

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PROPOSAL FOR A COUNCIL DECISION

adopting a programme for the European Atomic Energy Community and the European Economic Community in the field of scientific and technical education

THE COUNCIL OF THE EUROPEAN COMMUNITIES

Having regard to the Treaty establishing the European Atomic Energy Community, and in particular Article 7 thereof,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 235 thereof,

Having regard to the proposal from the Commission, submitted after consultation with the Scientific and Technical Committee (CST),

Having regard to the Opinion of the European Parliament

Whereas the Resolution of the Council of the European Communities of 14 January 1974 on the coordination of national policies and the definition of projects of interest to the Community in the field of science and technology foresees the implementation of a new research and development policy step by step,

Whereas the Treaty establishing the European Atomic Energy Community provides that the research programmes of the European Atomic Energy Community shall be supplemented by a programme in the field of scientific and technical training,

Whereas the Council, seeking to attain the objectives set out in Articles 2 and 3 of the Treaty establishing the European Economic Community, has also adopted research programmes in non-nuclear fields in accordance with the provisions of Article 235 of the Treaty,

Whereas a programme of scientific and technical training would appropriately supplement these programmes and thus help in attaining the objective set out in the Treaty,

Whereas the Treaty establishing the EEC does not provide the necessary powers,

Whereas the training of new scientific and technical staff and the development of qualified specialists in the areas covered by the research programmes adopted by the Council is an essential requirement for the step-by-step implementation by the Community of a common research and development policy,

HAS ADOPTED THIS DECISION:

Article 1

A programme of education as set out, in the Annex to this Decision is hereby adopted for a four-year period from 1 January 1977. The Annex forms an integral part of this Decision.

Article 2

The upper limit for expenditure commitments and for staff necessary for the implementation of this programme shall be five million units of account and seven Community officials ; the unit of account being defined in Article 10 of the Financial Regulation of 25 April 1973 applicable to the General Budget of the European Communities.

Article 3

The Commission shall be responsible for the implementation of this programme.

The Commission will be advised by an Advisory Committee on Programme Management which will be set up for this purpose.

A N N E X

The programme relates to those areas which are subject of a nuclear or non-nuclear Community research programme. It provides following measures:

1. Award of grants for scientific research work at various levels of training (diploma dissertations, Ph. D theses, post-doctorate research). Eligible for these grants are students of science or scientists and engineers from the Member States of the Community holding a diploma or doctorate. The research work must be carried out in a Community country other than the applicant's native country or his country of permanent residence.

Scientists and engineers from non-member countries with which the Community has relations in the scientific and technical field may be considered up to a maximum expenditure of 8 % of the total operating funds of the programme.

2. Financing of further training courses in areas of particular relevance to the Community's research and development policy.

OPINION OF THE SCIENTIFIC AND TECHNICAL COMMITTEE
on the Proposal for a programme for 1977 - 1980
"Scientific and Technical Training"

In connection with the four-year programme on "Education and Training" and its Community value, the Scientific and Technical Committee thinks that, in addition to encouraging a new generation of scientific and technical trainees at all levels, the programme opens up opportunities for young research workers to collaborate in a variety of Community science programmes.

The programme has, therefore, the dual advantage of increasing contacts between corresponding programmes at national and Community level - though the exchange of scientists and engineers - and of being able, in many cases, to contribute to the implementation of Community research programmes through additional scientific support.

The Scientific and Technical Committee therefore delivers a favourable opinion on the proposal from the Commission.

SUMMARY OF THE RESULTS OF THE CURRENT PROGRAMME ACHIEVED TO DATE

In the first three years of the programme up to the end of 1975, in-service traineeships were organized for 150 students at the various Community nuclear research centres, and 90 grants for Ph.D. research were either awarded or - in the case of grants that originated under the previous programme - extended. Here it should be borne in mind - and this applies also to the information given below - that owing to the late adoption of the programme (mid-1973) and the corresponding budget (autumn 1973), only the years 1974 and 1975 can be regarded as being fully representative of the implementation of the programme.

During the reference period, 30 Ph.D. theses were completed, presented and successfully defended. Of the candidates currently preparing for a Ph.D. with the aid of a Euratom grant, 35 will only finish their thesis two or three years after the expiry of the present programme, as the average time required for Ph.D. thesis in science or technology is about three years.

65 grants have been awarded for specialization in a particular area of nuclear science by way of practical scientific research in a nuclear research centre, together with 10 grants for post-doctoral scientific research in the interests of further in-depth training.

To promote interdisciplinary training, particularly in the field of radiobiology, an agreement was concluded between the Commission and seven universities in the Community on courses of several weeks' duration with practical laboratory work. These courses were held at Gif-sur-Yvette in 1973, in Brussels in 1974 and in Munich in 1975. The 1976 course is to be held in Ispra. Following these courses, 13 grants were awarded to promote in-depth training in this interdisciplinary sector.

Twenty-one qualified scientists and engineers already in employment were enabled to spend periods of three to twelve months in nuclear establishments outside their homeland for further training purposes.

FINANCIAL RECORD SHEET
relating to the Proposal for the programme of
"EDUCATION AND TRAINING"
1977 - 1980

A. PART ONE : APPROPRIATIONS

1. BUDGET HEADING CODE : Chapter 3.11.
2. TITLE OF BUDGET HEADING : Multiannual research programme
EDUCATION AND TRAINING
3. LEGAL BASIS : Article 7 of the EURATOM Treaty
Article 235 of the EEC Treaty
4. DESCRIPTION, AIM(S) AND JUSTIFICATION OF THE PROJECT:

a) description

This is a four-year programme designed to supplement the Community research policy with measures concerning the training of qualified young scientists and engineers. The programme will be extended to all sectors in which Community research programmes exist, in line with the research and development policy indicated by the Council in its Resolution of 14 January 1974.

b) aims

The object of the proposed programme is:

- 1) Award of grants for scientific research work at various levels of training: diploma dissertations, Ph. D theses, post-doctorate research;
- 2) Financing of further training courses in areas of particular relevance to the Community's research and development policy.

c) justification

The Community's research programmes need to be complemented by education and training programmes. This principle was expressly laid down in the Treaty establishing EURATOM. The reasoning applied to the nuclear sector is also valid for the fields of non-nuclear research. For this reason, it is consequently proposed to extend the programme's field of application.

5. FINANCIAL IMPLICATIONS OF THE PROJECT (IN U.A.)

5.0. Implications in respect of expenditure

5.0.0. Multiannual timetable

Commitment appropriations

	1977	1978	1979	1980
	<u>Estimated commitment appropriations</u> (at current prices)			
1. Measures decided				
2. Proposals subm. to the Council				
3. Proposals being drafted	1.247.783	1.507.875	1.503.385	740.957
TOTAL	1.247.783	1.507.875	1.503.385	740.957

(1) at current prices 1.247.783

Payment appropriations

	1977	1978	1979	1980	1981
	<u>Estimated payment appropriations</u> (at current prices)				
1. Measures decided	832.100	93.855			
2. Proposals subm. to the Council					
3. Proposals being drafted	267.900	1.587.875	1.553.385	1.345.260	245.580
TOTAL	1.100.000	1.681.730	1.553.385	1.345.260	245.580

at current prices 1.100.000

5.1. Consequences for resources NIL

6. CONTROL MEASURES

Budgetary checks will be made by the authorizing department itself. Category A officials competent in the matter will monitor the progress of the actions until they have been completed satisfactorily. Scientific supervision will be the responsibility of the competent officials of DG XII and the heads of the scientific programmes.

In addition, an Advisory Committee on Programme Management will be set up to advise the Commission on the general implementation of the programme, and in particular on the award of the available funds.

B. PART TWO : ADDITIONAL DATA

7. TOTAL COST OF THE PROJECT FOR THE WHOLE OF ITS EXPECTED DURATION

7.0. Expenditure:

- Community budget	5 million u.a.
- national budgets	- u.a.
- private sector	- u.a.
Total cost	<u>5 million u.a.</u>

7.1. Resources: NIL

8. INFORMATION ON THE PERSONNEL

Number of staff: 7 officials, including
2 Category A scientific officials
2 Category B administrative officials
3 Category C administrative officials

9. PROJECT FINANCED FROM:

annual Community budgets