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FRAMEWORK PROGRAMME  
FOR COMMUNITY ACTIVITIES IN THE FIELD OF  
RESEARCH AND TECHNOLOGICAL DEVELOPMENT (1987-1991)

Situation report on decisions taken up to 31 December 1988

( Commission Staff Working Paper )

**SUMMARY:** As of 31 December 1988, approved specific programmes represent about 74% of the amount deemed necessary for the implementation of the Framework Programme. Common position has been reached for about 14 %, whereas specific programme proposals under discussion amount to a total of about 9%. Altogether, about 97% of the Framework Programme volume has been identified against specific programmes.

## 1. INTRODUCTION

On 28 September 1987, the Council adopted the Framework Programme (FP) for Community activities in the field of Research and Technological Development (RTD) for the period 1987 to 1991. It represents the first application of the Single European Act, which entered into force on 1 July 1987.

The FP was adopted by the Council, acting unanimously on a proposal from the Commission and after consulting the European Parliament and the Economic and Social Committee. It is being implemented through a variety of specific RTD programmes which are adopted by the Council by qualified majority on proposal from the Commission, after consulting the Economic and Social Committee and in cooperation with the European Parliament.

The FP is a mid-term planning tool for the Community strategy on RTD. From now on, all RTD activities to be executed through specific programmes will be part of a multiannual FP, laying down the scientific and technical objectives, defining their respective priorities, setting out the main lines of the activities envisaged, and fixing the amount deemed necessary, the detailed rules for financial participation by the Community in the programme as a whole, and the breakdown of this amount between the various activities envisaged.

The existence of such a FP gives to all those concerned with research, be they industrial partners or researchers in universities or national centres, clear indications about the mid-term orientation of Community research. This helps them to plan their own activities, knowing where and how the Community will act. In this way, Community activities will find their appropriate place within the different forms of European and international cooperation.

The FP is not an isolated action. It fits into a whole Community system: upstream are the actions relating to education and training such as ERASMUS, COMETT, and downstream are the various actions to promote innovation, the transfer of technology (e.g. programme SPRINT), the demonstration of economic feasibility, etc. Moreover, the FP was devised in harmony with and provides the scientific back-up for the Community's industrial strategy and agricultural policy, and its actions in such fields as health, environment and energy.

The formulation of the FP took due account of results achieved so far in the context of Community actions, as well as of current needs and developments. Thus, new specific programmes under the FP are :

- \* either a logical continuation of a long-term programme based on established major Community goals such as energy supply : Fusion ;
- \* or a logical continuation of a previous programme adapted to new requirements such as
  - . research dealing more with the needs of industry : JRC ; or
  - . new major scientific objectives such as cancer and AIDS : Medical Research;
- \* or necessary major amplifications of previous programmes such as ESPRIT, RACE, BRITE, EURAM, Stimulation (SCIENCE) ;
- \* or launching of new Community initiatives such as DRIVE, DELTA, AIM, ECLAIR, FLAIR, Marine S/T, Access to Large-Scale Scientific Facilities.

This is the first descriptive report on the situation of the FP (1987-1991) as of 31 December 1988, less than one and a half year after its formal adoption. It is solely concerned with identifying the extent to which individual specific programmes within the FP have been adopted by, reached a common position within, or been submitted to the Council. As such, it does not address the implementation/results of the individual programmes themselves.

## 2. THE FP DECISION

The financial provisions of the FP correspond to the amount deemed necessary for the specific programmes - being new proposals or revisions of those already running - to be decided during the period 1987 to 1991. The total amount has been fixed at 5396 MioECUs (TABLE 1, see p.12). Whereas the amounts allocated to the subdivisions of the eight activities are to be regarded as indicative and may vary to a certain extent - any modifications of the breakdown between activities will be subject to an adaptation of the FP itself.

Due to the fact that decisions on specific programmes (TABLE 2, see p.13) will be taken during the whole period of the FP (1987-1991), several programmes will extend beyond 1991. Therefore, part of the amount deemed necessary will be committed only after 1991. This part, which is called the "overhang", has been assessed at an overall 863 MioECUs, which means that of the 5396 MioECUs for the FP, not more than 4533 MioECUs are deemed necessary to be committed until end 1991.

As stated previously, the FP covers new programme decisions to be taken during the period 1987 to 1991. It does not cover the programmes which are still running, following decisions taken before 1987. Of the total allocated to these programmes, 1081.1 MioECUs (1) remain to be committed during the period 1987-1991, which is to be added to 4533 MioECUs of the FP to be committed until end 1991 (TABLE 3, see p.14).

## 3. GENERAL SITUATION AND OUTLOOK

The FP decision was taken in September 1987 for a period which had already started on 1 January the same year. Since then, considerable effort has been oriented towards minimizing any negative effects which resulted from this delay. The extent to which lost time can be made up, and a balanced

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(1) In the FP decision this amount was estimated to be 1084 MioECUs. However, due to some financial transfers during the 1987-execution, this indicative amount was reduced to 1080.1 MioECUs.

development of the FP implementation can be ensured, depends essentially on how quickly a specific programme proposal can be forwarded and the new procedures for its adoption can be implemented by the Community institutions.

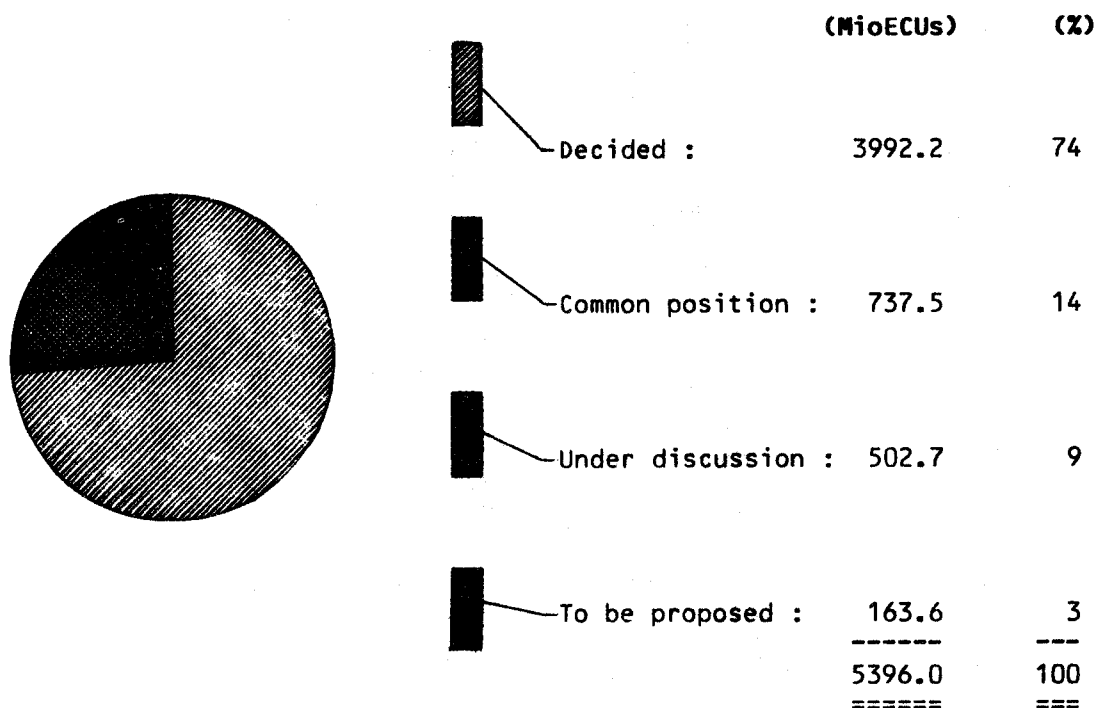
The Commission has made substantial efforts to implement the FP decision in a timely and balanced manner : it has approved a series of new specific programmes which are now being followed up and proposals for several new ones are currently being prepared. The Commission has also taken steps to increase the awareness of those concerned so as to speed up the effective implementation of the FP. As a result of this approach, each action and generally each subdivision of the FP contains specific programmes already running and/or new proposals. Overall, the situation as of 31 December 1988 is as follows (TABLES 3 and 4, see pp. 14 and 15) :

\* the Council

- has **approved** new specific programmes or programme revisions amounting to a total financial envelope of 3992.2 MioECUs, which represents about 74% of the FP volume; and moreover
- has reached **common position** for specific programmes with a financial envelope of a further 737.5 MioECUs, which represents about 14% of the FP volume ;

\* the Commission's proposals still **under discussion** amount to a total of 502.7 MioECUs, which represents about 9% of the FP volume.

**All in all, as of 31 December 1988, about 97% of the FP volume has been identified against specific programmes.**



Out of the various subdivisions in the FP only the "3.3. Raw materials and recycling" has not yet been the subject of proposal for a new programme or revision of the existing one, however, a new programme is about to be proposed.

#### 4. ANALYSIS BY ACTIVITIES

The following gives a brief and factual account of the situation of the FP as of 31 December 1988. Summary overviews of the eight activities are given in TABLES 5 to 12 (pp. 16 to 23) :

The financial information relevant to each subdivision of the eight activities (1) - given in boxes below - include the following :

- A : the amount already allocated which corresponds to the sum of Council decisions and common positions since the FP adoption, and of new proposals by the Commission, and  
B : the amount not yet allocated.

Also shown (in brackets) is the corresponding percentage of the amount deemed necessary (ADN) for the subdivision according to the FP decision.

##### Activity 1 : Quality of life

This activity covers a very wide-ranging area of research concentrating on important aspects of health and the environment. The ADN has been entirely allocated to specific programmes (2).

##### 1.1. Health :

A = 80.0 MioECUs (100%);	B = 0
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The recently approved medical and public health research programme covers most of the objectives specified for this subdivision and extends to the whole FP period. The objectives relevant to predictive medicine, are fulfilled with the newly proposed programme; this effort in a new Community research area completes the objectives and exhausts the remainder of the finance of this subdivision.

##### 1.2. Radiation protection :

A = 34.0 MioECUs (100%);	B = 0
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In qualitative terms the JRC programme and the Shared Cost Action (SCA) programme correspond to the orientations envisaged for Community effort in this field. The SCA programme, revised in December last year, ends in 1989 and a new proposal has just been presented. The finance available for this proposal appears to be insufficient to allow for continued meaningful research - although it is very probable that the need for Community support and coordinated radiation protection research will still exist in the 1990's at a level which should be consistent, at least, with the actual one.

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(1) Hereinafter referred to as 'subdivision'.  
(2) Hereinafter referred to as 'programmes'.

1.3. Environment :

A = 261.0 MioECUs (100%);	B = 0
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The previously approved SCA environmental protection programme (1986-1990) together with the JRC programmes cover globally the objectives related to environmental protection, cultural heritage, climatology and natural hazards, as well as major technological hazards - although not always exhaustively. The just proposed programmes STEP and EPOCH cover further these objectives as well as the one related to fire safety. A pilot programme on remote handling technology applied to places contaminated by radioactive material is initiated in the context of nuclear fuel cycle safety under the subdivision "5.1. fission : nuclear safety". However, this subdivision, after being fully implemented in quantitative terms, falls short of the FP objective related to research on reduction of risks in private life.

Activity 2 : Towards a larger market and an information and communications society

The research is centered on information technologies and on the related field of telecommunications, and supplemented by a series of specialised programmes dealing with applications of these new technologies. The ADN has almost entirely been allocated to programmes already approved.

2.1. Information technologies :

A = 1600.0 MioECUs (100%);	B = 0
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The recently decided programme ESPRIT II (1987-1992) covers entirely the financial amount and the objectives set out for this subdivision. The sectors to be supported have been adapted to the rapid pace of technological development and consolidated into three sectors : microelectronics, information processing systems, and IT application technologies. New emphasis is being placed on computer integrated manufacturing (CIM), application specific integrated circuits (ASIC), and superconductivity.

2.2. Telecommunications :

A = 550.0 MioECUs (100%);	B = 0
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With the already decided programme RACE (1987-1992), the financial amount and the objectives set out for this subdivision are entirely covered. The programme deals with the Integrated Broadband Communications (IBC) of the future, and is sub-divided into three parts : systems, technology, and integration. It is designed to lay the foundations of the Community's communications infrastructure for the 1990's and into the 21st century by combining the expertise of telecommunications researchers, manufacturers, administrations, and broadcasting stations across European frontiers.

2.3. New services of common interest (including transport) :

A = 100.0 MioECUs (80%); B = 25.0 MioECUs (20%)

The programmes DRIVE, DELTA (exploratory action) and AIM (exploratory action) correspond to the integration of information technologies and broadcasting for new applications in road security and management, in open and distance learning, and in health care, respectively. All three programmes have been adopted by the Council. A new programme in the field of transport, to be proposed in 1989, will complete the coverage of the objectives set out for this subdivision.

**Activity 3 : Modernization of industrial sectors**

This activity covers application of new technologies in industry as well as the whole vast field of materials technology and the area of raw materials. Also included is research for the establishment of norms and standards. So far, 95% of the ADN has been allocated to programmes.

A new BRITE/EURAM programme has been proposed which integrates the actions foreseen under subdivisions 3.1. and 3.2. covering manufacturing technologies and advanced materials, so building on the achievements already emerging in the first BRITE and EURAM programmes. Moreover, the BRITE/EURAM includes a pilot effort on aeronautical research to respond to the severe technological challenge which confronts the European aeronautical industry.

3.1. Science and technology for manufacturing industry :

A = 400.0 MioECUs (100%); B = 0

With the revision of BRITE, the objectives set out for this subdivision are covered until the end of 1988. The new BRITE/EURAM programme enables the Community to pursue and expand its encouragement of transfrontier industrial cooperation on new production technologies and the application of new materials. Under this programme a section covers precompetitive research in technological areas which are of primary relevance to aeronautics, in particular aeroplanes and helicopters.

3.2. Science and technology of advanced materials :

A = 220.0 MioECUs (100%); B = 0

The objectives and the ADN of this subdivision are covered with the JRC and the BRITE/EURAM programmes. The latter will pursue and amplify beyond 1988 the current effort for the development of advanced materials, including superconductive materials.

3.3. Raw materials and recycling :

A = 0 ; B = 45.0 MioECUs (100%)

The specified objectives for this subdivision will be covered by a new programme which will pursue the current research effort. The programme is about to be proposed.

3.4. Technical standards, measurement methods and reference materials :

A = 180.0 MioECUs (100%);	B = 0
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The approved continuations of the BCR programme together with the JRC programmes cover entirely the objectives and the financial amount set out for this subdivision.

**Activity 4 : Exploitation and optimum use of biological resources**

The activity includes a whole group of closely linked research on the sensible use of living resources. The ADN has been entirely allocated to programmes.

4.1. Biotechnology :

A = 120.0 MioECUs (100%);	B = 0
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The biotechnology research programme and its revision will terminate by the end of 1989. The just proposed BRIDGE programme will consider all the planned objectives including, in particular, research dealing with aspects of basic biotechnology for removal of S/T bottlenecks to the exploitation of methods and materials originating from fundamental research.

4.2. Agro-industrial technologies :

A = 105.0 MioECUs (100%);	B = 0
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Although the proposed programme on agro-industrial technologies (ECLAIR), scheduled to end in 1993, uses about 3/4 of the envisaged financial effort, it covers only some aspects of innovation possibilities. (Being a new Community research action, it will have a progressive start and concentrates on selected objectives). With the newly proposed programme on food-linked agro-industrial research (FLAIR), which deals specifically with research on the processing-distribution-consumer end of the food chain, the ADN is fully exhausted.

4.3. Competitiveness of agriculture and management of agricultural resources :

A = 55.0 MioECUs (100%);	B = 0
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The ongoing agricultural research programme will end in 1988; the planned objectives will be fulfilled with the proposed programme. However, the finance available is very limited considering the scale of the planned objectives.

**Activity 5 : Energy**

Three principal forms of energy are the subject of research at Community level : nuclear fission energy, thermo-nuclear fusion energy, and non-nuclear energy. 93% of the ADN has already been allocated to programmes.



5.1. Fission : nuclear safety :

A = 360.4 MioECUs (82%); B = 79.6 MioECUs (18%)

The ongoing SCA programmes together with the JRC programmes cover the planned objectives - although not always exhaustively. The proposed programme on decommissioning operations will continue and enlarge the Community effort in this field beyond 1988. Another programme on nuclear remote handling technology (TELEMAN) has recently been adopted by the Commission. Finally, a new programme in the field of radioactive waste will be proposed during 1989, thereby completing the coverage of the objectives set out for this subdivision.

5.2. Controlled thermo-nuclear fusion :

A = 611.0 MioECUs (100%) ; B = 0

The thermonuclear fusion programmes together with the JRC programme on fusion technology and safety fully cover the specified objectives of this subdivision and they extend to the entire FP period.

5.3. Non-nuclear energies and rational use of energy :

A = 122.0 MioECUs (100%); B = 0

The previously approved and still ongoing programme will end in 1988. A newly proposed programme JOULE will address current priorities in energy R&D regarding energy conservation, fossil fuels, renewable energies, and models for energy and environment. By this programme the specified objectives of this subdivision are fully covered and the finance available exhausted.

**Activity 6 : Science and technology for development**

This activity covers application of science and technology to the problems of the Third World.

A = 80.0 MioECUs (100%); B = 0

The programme decided recently by the Council entirely accounts for the financial amount as well as the objectives relating to this activity.

**Activity 7 : Exploitation of sea bed and use of marine resources**

The activity is intended to increase knowledge of the oceanic environment, and to explore, manage and conserve sea resources as well as to develop aquaculture resources. The ADN has been entirely allocated to programmes.

7.1. Marine science and technology :

A = 50.0 MioECUs (100%);                      B = 0

The objectives for this subdivision will be covered by the new MAST programme which has recently been proposed. The programme fully covers the finance available to this subdivision.

7.2. Fisheries :

A = 30.0 MioECUs (100%);                      B = 0

The approved fisheries programme covers the specified orientation and finance, and extends to end-1992.

Activity 8 : Improvement of European S/T cooperation

This activity includes several subdivisions with the common characteristic of contributing to accelerate the establishment of the "Europe of science and technology". Globally, 95% of the ADN has already been allocated to programmes.

To allow for the necessary effort in the field of strategic analyses, forecasting and evaluation in matters of research and technology (MONITOR - see under subdivisions 8.3.), a slight adjustment of the financial resources was necessary inside this activity : 3 MioECUs has been transferred from subdivision 8.1 (Stimulation...) to subdivision 8.3 (Forecasting...).

8.1. Stimulation, enhancement and use of human resources :

A = 173.0 MioECUs (96%);                      B = 4.0 MioECUs (2%)

The approved SCIENCE plan together with the proposed programme on economic science (SPES) cover until 1992 most of the objectives set out for this subdivision, except the aspects of "career awards".

8.2. Use of major installations :

A = 30.0 MioECUs (100%);                      B = 0

With the proposed Community plan to facilitate access to large-scale scientific facilities of interest to Europe, the objectives and the financial amount attributed to this subdivision are entirely covered.

8.3. Forecasting and assessment and other back-up measures (including statistics) :

A = 26.0 MioECUs (113%);	B = 0
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With the newly proposed MONITOR programme, the objectives relating to strategic analysis, forecasting and evaluation will be covered. Another recently proposed programme covers the objectives relating to the development of statistical tools based on expert systems (DOSES).

8.4. Dissemination and utilization of S/T research results :

A = 45.0 MioECUs (82%);	B = 10.0 MioECUs (18%)
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Recently, two programmes have been proposed : one to proceed to the third phase of EUROTRA (research on machine translation) and another on dissemination/utilization of S/T results and computer communication networks (VALUE).

ANNEXES :

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T A B L E 1 :

**FRAMEWORK PROGRAMME OF COMMUNITY ACTIVITIES IN THE FIELD OF RESEARCH  
AND TECHNOLOGICAL DEVELOPMENT (1987 to 1991).**

(Council decision of 28 September 1987)

Breakdown of the amount deemed necessary between the various activities envisaged:

	<i>(million ECU)</i>	
1. Quality of life		<b>375</b>
1.1. Health	80	
1.2. Radiation protection	34	
1.3. Environment	261	
2. Towards a large market and an information and communications society		<b>2 275</b>
2.1. Information technologies	1 600	
2.2. Telecommunications	550	
2.3. New services of common interest (including transport)	125	
3. Modernization of industrial sectors		<b>845</b>
3.1. Science and technology for manufacturing industry	400	
3.2. Science and technology of advanced materials	220	
3.3. Raw materials and recycling	45	
3.4. Technical standards, measurement methods and reference materials	180	
4. Exploitation and optimum use of biological resources		<b>280</b>
4.1. Biotechnology	120	
4.2. Agro-industrial technologies	105	
4.3. Competitiveness of agriculture and management of agricultural resources	55	
5. Energy		<b>1 173</b>
5.1. Fission: nuclear safety	440	
5.2. Controlled thermonuclear fusion	611	
5.3. Non-nuclear energies and rational use of energy	122	
6. Science and technology for development	80	<b>80</b>
7. Exploitation of the sea bed and use of marine resources		<b>80</b>
7.1. Marine science and technology	50	
7.2. Fisheries	30	
8. Improvement of European S/T cooperation		<b>288</b>
8.1. Stimulation, enhancement and use of human resources	180	
8.2. Use of major installations	30	
8.3. Forecasting and assessment and other back-up measures (including statistics)	23	
8.4. Dissemination and utilization of S/T research results	55	
<b>Total</b>		<b>5 396</b>

TABLE 2 :

SPECIFIC PROGRAMMES UNDER THE FRAMEWORK PROGRAMME (31 DECEMBER 1988)

	1986	1987	1988	1989	1990	1991	1992	Ref. doc.
<b>1. QUALITY OF LIFE</b>								
1.1. Health								
Medical and health research.....CONC	13,3		65					L334-87
Predictive medicine.....SCA-CONC				XXXXXXXXXX 15				COM(88)424
1.2. Radiation protection								
Radiation protection.....SCA		58						L83-85
Radiation protection (revision).....SCA			10					L16-88
Radiation protection.....SCA					21,2	XXXXXXXXXX		COM(88)789
Evaluation and monitoring of radioactivity.....JRC			2,8					L286-88
1.3. Environment								
Environment, climatology and major technological hazards.....SCA-CONC			75					L159-86
STEP/EPOCH.....SCA-CONC				XXXXXXXXXXXXXXXXXXXX 115				COM(88)632
Environmental protection.....JRC	49			77				L286-88
Remote-sensing application.....JRC	29			36,5				L286-88
Industrial hazards.....JRC	29			32,5				L286-88
<b>2. TOWARDS A LARGE MARKET</b>								
2.1. Information technologies								
ESPRIT I.....SCA		750						L67-84
ESPRIT II.....SCA				1600				L118-88
2.2. Telecommunications								
Telecommunications technologies (RACE).....SCA	14			550				L16-88
2.3. New services of common interest								
DRIVE.....SCA				60				L206-88
DELTA.....SCA				20				L206-88
AIM.....SCA				20				L314-88
<b>3. MODERNIZATION OF INDUSTRIAL SECTORS</b>								
BRITE/EURAM (2).....SCA				XXXXXXXXXX 499,5				(1)
3.1. Science and technology for manufacturing industry								
Basic research in industrial technology (BRITE).....SCA		125						L83-85
BRITE (revision).....SCA		60						L59-88
3.2. Science and technology of advanced materials								
Materials and structures.....JRC	28							L3-84
Advanced materials (EURAM).....SCA		30						L159-86
Advanced materials.....JRC				60,5				L286-88
3.3. Raw materials and recycling								
Primary raw materials, secondary raw materials, wood.....SCA			40					L159-86
3.4. Technical standards, measurement methods and reference materials								
Community Bureau of Reference.....SCA	25				59,2			L206-88
Measurements and reference materials.....JRC	64			75,6				L286-88
Reference methods and structural reliability.....JRC				34,6				L286-88
Reference methods for non-nuclear energy sources.....JRC				10,6				L286-88
<b>4. BIOLOGICAL RESOURCES</b>								
4.1. Biotechnology								
Biotechnology.....SCA			55					L83-85
Biotechnology (revision).....SCA			20					L206-88
BRIDGE.....SCA						100	XXXXXXXXXX	COM(88)806
4.2. Agro-industrial technologies								
ECLAIR.....SCA				80	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX			(1)
FLAIR.....SCA-CONC					25	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		COM(88)351
4.3. Competitiveness of agriculture								
Agricultural research.....SCA-CONC	30				XXXXXXXXXXXXXXXXXXXX 55	XXXXXXXXXX		COM(88)459
<b>5. ENERGY</b>								
5.1. Fission : nuclear safety								
Reactor safety.....JRC	192(3)			147,9				L286-88
Radioactive waste storage and management.....SCA			62					L83-85
Radioactive waste management.....JRC	49			48,5				L286-88
Safeguarding and management of fissile materials.....JRC	45			44,5				L286-88
Nuclear fuels and actinides research.....JRC	66			69				L286-88
Decommissioning of nuclear plants.....SCA		12,1			31,5	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		COM(88)415
TELEMAN.....SCA					19	XXXXXXXXXXXXXXXXXXXXXXXXXXXX		COM(88)416
5.2. Controlled thermonuclear fusion								
Thermonuclear fusion : JET and general programme.....SCA	506				735(4)			L222-88
Fusion technology and safety.....JRC	59			60				L286-88
5.3. Non-nuclear energies								
Non-nuclear energies.....SCA		175						L83-85
JOLE.....SCA					122	XXXXXXXXXXXXXXXXXXXX		(1)
Methods for testing solar energy systems.....JRC	22							L3-84
Energy management in dwellings.....JRC	17							L3-84
<b>6. SCIENCE AND TECHNOLOGY FOR DEVELOPMENT</b>								
Science and technology for development.....SCA	40			80				L355-87
<b>7. MARINE RESOURCES</b>								
7.1. Marine science and technology								
Coastal navigation aids.....CONC	2,3							L18-86
MAST.....SCA						50	XXXXXXXXXX	COM(88)587
7.2. Fisheries								
Fisheries research.....SCA					30			L314(87)
<b>8. EUROPEAN SCIENTIFIC AND TECHNICAL COOPERATION</b>								
8.1. Stimulation								
Stimulation.....SCA		60						L83-85
SCIENCE.....SCA				167				L206-88
SPES.....SCA				XXXXXXXXXXXX 6	XXXXXXXXXXXXXXXXXXXXXXXXXXXX			(1)
8.2. Use of major installations								
Access to major facilities.....SCA					30	XXXXXXXXXXXXXXXXXXXX		(1)
8.3. Forecasting and assessment								
FAST.....SCA	8,5							L293-83
MONITOR.....SCA				XXXXXXXXXXXXXXXXXXXX 22	XXXXXXXXXXXXXXXXXXXX			COM(88)386
DOSES.....SCA				XXXXXXXXXXXX 4	XXXXXXXXXXXXXXXXXXXX			COM(88)410
8.4. Dissemination and utilization of results								
EUROTRA.....SCA		20,5		XXXXXXXXXXXX 7	XXXXX			COM(88)270
VALUE.....SCA				XXXXXXXXXXXXXXXXXXXX 38	XXXXXXXXXXXXXXXXXXXX			COM(88)260

(1) Council common position.  
 (2) Relating to subdivisions 3.1. and 3.2.  
 (3) Including shared-cost research (1985-87).  
 (4) Rolling programme : 551 million ECU covered by the 1987-91 FP.  
 For JRC, 5% of amounts for exploratory research.

The figures given in the columns above indicate the amount allocated to the activity in million ECU.  
 CONC : concerted action (including COMBT) \* : Programme in hand before 1986  
 SCA : shared-cost action == : Programme adopted by the Council  
 JRC : Joint Research Centre action xxxx : Programme proposed by the Commission

**TABLE 3 :**  
**FRAMEWORK PROGRAMME :**  
 General overview - 31 December 1988

ACTIVITY	STATUS (adopted + common position + proposed)					BALANCE		FP DECISION	
	1 Part adopted before 1.1.87	2 Part adopted since 1.1.87	3 Part Council common position	4 Part proposed by the Commission, still to be adopted	5 Of which overhang	Total 6-(2+3+4)	Of which overhang 7-5	6 Total	7 Overhang (*)
<b>1. Quality of life</b>	103.2	223.8	.0	151.2	25.0	.0	.0	375.0	25.0
1.1 Health	.0	65.0	.0	15.0	.0	.0		80.0	
1.2 Radiation protection	25.2	12.8	.0	21.2	.0	.0		34.0	
1.3 Environment	78.0	146.0	.0	115.0	.0	.0		261.0	
<b>2. Towards a large market</b>	190.0	2250.0	.0	.0	416.2	25.0	18.0	2275.0	434.2
2.1 Information technologies	190.0	1600.0	.0	.0	330.0	.0		1600.0	
2.2 Telecommunications	.0	550.0	.0	.0	86.2	.0		550.0	
2.3 Services of common int.	.0	100.0	.0	.0	.0	25.0		125.0	
<b>3. Modern. ind. sectors</b>	138.8	300.5	499.5	.0	144.0	45.0	10.0	845.0	154.0
3.1 S/T manufact. ind.	59.7	60.0	340.0	.0	85.0	.0		400.0	
3.2 S/T advanced materials	32.5	60.5	159.5	.0	49.0	.0		220.0	
3.3 Raw materials-recycling	25.4	.0	.0	.0	.0	45.0		45.0	
3.4 Techn. standards	21.2	180.0	.0	.0	10.0	.0		180.0	
<b>4. Biological resources</b>	29.5	20.0	80.0	180.0	79.2	.0	.0	280.0	79.2
4.1 Biotechnology	20.0	20.0	.0	100.0	37.0	.0		120.0	
4.2 Agro-ind. technologies	.0	.0	80.0	25.0	33.2	.0		105.0	
4.3 Competitiv. of agricult.	9.5	.0	.0	55.0	9.0	.0		55.0	
<b>5. Energy</b>	592.0	920.9	122.0	50.5	59.1	79.6	25.7	1173.0	84.8
5.1 Fission: nucl. safety	107.8	309.9	.0	50.5	8.0	79.6		440.0	
5.2 Controlled therm. fusion	396.5	611.0	.0	.0	50.0	.0		611.0	
5.3 Non-nuc. energies	87.7	.0	122.0	.0	1.1	.0		122.0	
<b>6. S/T for development</b>	.0	80.0	.0	.0	.0	.0	.0	80.0	.0
6.1 S/T for development	.0	80.0	.0	.0	.0	.0		80.0	
<b>7. Marine resources</b>	.0	30.0	.0	50.0	16.5	.0	.0	80.0	16.5
7.1 Marine S/T	.0	.0	.0	50.0	10.0	.0		50.0	
7.2 Fisheries	.0	30.0	.0	.0	6.5	.0		30.0	
<b>8. Eur. S/T cooperation</b>	26.6	167.0	36.0	71.0	59.7	14.0	9.6	288.0	69.3
8.1 Stimulation	25.0	167.0	6.0	.0	40.0	7.0 (**)		180.0	
8.2 Use major installations	.0	.0	30.0	.0	7.0	.0		30.0	
8.3 Forecast-assessment	1.6	.0	.0	26.0	5.7	-3.0 (**)		23.0	
8.4 Diss.util. S/T results	.0	.0	.0	45.0	7.0	10.0		55.0	
<b>TOTAL FP</b>	<b>1080.1</b>	<b>3992.2</b>	<b>737.5</b>	<b>502.7</b>	<b>799.7</b>	<b>163.6</b>	<b>63.3</b>	<b>5396.0</b>	<b>863.0</b>

(\*) Due to decisions on specific programmes taken after the FP decision - in particular under activity "5. Energy" - the actual repartition of the overhang has been slightly modified as compared to the indicative one presented earlier. However, the total of 863.0 MioECUs is respected.

(\*\*) 3.0 MioECUs has been transferred from 8.1. to 8.3. which corresponds to 2% and 13%, respectively, of the amounts deemed necessary for these subdivisions.

**T A B L E 4 :**

FRAMEWORK PROGRAMME :  
Situation as of 31 December 1988

ACTIVITY	Amounts deemed necessary (ADNs) in MioECUs corresponding to :				Proportion of the ADN for the Framework Programme (%)
	Adopted since 1.1.87	Council common position	Commission proposal still to be adopted	Total : adopted + common position + proposed	
<b>1. Quality of life</b>	223.8	.0	151.2	375.0	100
1.1 Health	65.0	.0	15.0	80.0	100
1.2 Radiation protection	12.8	.0	21.2	34.0	100
1.3 Environment	146.0	.0	115.0	261.0	100
<b>2. Towards a large market</b>	2250.0	.0	.0	2250.0	99
2.1 Information techn.	1600.0	.0	.0	1600.0	100
2.2 Telecommunications	550.0	.0	.0	550.0	100
2.3 Serv. of common int.	100.0	.0	.0	100.0	80
<b>3. Modern. ind. sect.</b>	300.5	499.5	.0	800.0	95
3.1 S/T manufact. ind.	60.0	340.0	.0	400.0	100
3.2 S/T advanced materials	60.5	159.5	.0	220.0	100
3.3 Raw materials-recycl.	.0	.0	.0	.0	0
3.4 Tech. standards	180.0	.0	.0	180.0	100
<b>4. Biological resources</b>	20.0	80.0	180.0	280.0	100
4.1 Biotechnology	20.0	.0	100.0	120.0	100
4.2 Agro-ind. technologies	.0	80.0	25.0	105.0	100
4.3 Competitiv. of argicult.	.0	.0	55.0	55.0	100
<b>5. Energy</b>	920.9	122.0	50.5	1093.4	93
5.1 Fission : nucl. safety	309.9	.0	50.5	360.4	82
5.2 Controlled therm. fusion	611.0	.0	.0	611.0	100
5.3 Non-nucl. energies	.0	122.0	.0	122.0	100
<b>6. S/T for develop.</b>	80.0	.0	.0	80.0	100
6.1 S/T for develop.	80.0	.0	.0	80.0	100
<b>7. Marine resources</b>	30.0	.0	50.0	80.0	100
7.1 Marine S/T	0.0	.0	50.0	50.0	100
7.2 Fisheries	30.0	.0	.0	30.0	100
<b>8. Eur. S/T cooperation</b>	167.0	36.0	71.0	274.0	95
8.1 Stimulation	167.0	6.0	.0	173.0	96 (*)
8.2 Use major installations	.0	30.0	.0	30.0	100
8.3 Forecast.-assessment	.0	.0	26.0	26.0	113 (*)
8.4 Diss.-Util. S/T results	.0	.0	45.0	45.0	82
<b>T O T A L</b>	<b>3992.2</b>	<b>737.5</b>	<b>502.7</b>	<b>5232.4</b>	<b>97</b>

(\*) 3.0 MioECUs has been transferred from 8.1 to 8.3. which corresponds to about 2% and 13%, respectively, of the amounts deemed necessary for these subdivisions.



T A B L E 5 :

ACTIVITY 1 : QUALITY OF LIFE :  
General overview - 31 December 1988

( M i o e c u s )

Activity (Framework Programme)	Programme (*)	Part decided before 1.1.1987	Part decided since 1.1.1987	Council common position	Part proposed by the Commission	Of which overhang	BALANCE	Of which overhang	FP decision	Overhang
1. Quality of life		105.2	223.8	.0	151.2	25.0	.0	.0	375.0	25.0
1.1 Health	Med. research Pred. medicine	.0 .0 .0	65.0 65.0 .0	.0 .0 .0	15.0 .0 15.0	.0 .0 .0	.0	.0	80.0	
1.2 Radiation protection	Rad. prot. SCA Rad. prot. SCA Rad. prot. JRC	25.2 23.0 2.2	12.8 10.0 2.8	.0 .0 .0	21.2 .0 21.2 .0	.0 .0 .0 .0	.0	.0	34.0	
1.3 Environment	Env. SCA STEP/EPOCH Env. JRC	78.0 50.5 .0	146.0 .0 .0	.0 .0 .0	115.0 .0 115.0 .0	25.0 .0 25.0 .0	.0	.0	261.0	

(\*) See Table 2.

TABLE 6 :

ACTIVITY 2 : TOWARDS A LARGE MARKET AND AN INFORMATION AND COMMUNICATIONS SOCIETY.  
General overview - 31 December 1988

( M I O E C U S )

Activity (Framework Programme)	Programme  (*)	Part decided before 1.1.1987	Part decided since 1.1.1987	Council common position	Part proposed by the Commission	Of which overhang	BALANCE	Of which overhang	FP decision	Overhang
2. Towards a large market		190.0	2250.0	.0	.0	416.2	25.0	18.0	2275.0	434.2
2.1 Information technologies	ESPRIT	190.0 190.0	1600.0 1600.0	.0 .0	.0 .0	330.0 330.0	.0		1600.0	
2.2 Telecommunications	RACE	.0 .0	550.0 550.0	.0 .0	.0 .0	86.2 86.2	.0		550.0	
2.3 Services of comm. int.	DELTA DRIVE AIM	.0 .0 .0 .0	100.0 20.0 60.0 20.0	.0 .0 .0 .0	.0 .0 .0 .0	.0 .0 .0 .0	25.0		125.0	

(\*) See Table 2.

TABLE 7 :

ACTIVITY 3 : MODERNIZATION OF INDUSTRIAL SECTORS.  
General overview - 31 December 1988

( M I O E C U S )

Activity (Framework Programme)	Programme (*)	Part decided before 1.1.1987	Part decided since 1.1.1987	Council common position	Part proposed by the Commission	Of which overhang	BALANCE	Of which overhang	FP decision	Overhang
3. Modern. ind. sectors		138.8	300.5	499.5	.0	144.0	45.0	10.0	845.0	154.0
3.1 S/T manufact. industry		59.7	60.0	340.0	.0	85.0	.0		400.0	
	BRUTE	59.7	60.0	.0	.0	.0				
	BRUTE/EURAM	.0	.0	340.0	.0	85.0				
3.2 S/T adv. materials		32.5	60.5	159.5	.0	49.0	.0		220.0	
	EURAM	19.6	.0	.0	.0	.0				
	BRUTE/EURAM	.0	.0	159.5	.0	49.0				
	S/T mat. JRC	12.9	60.5	.0	.0	.0				
3.3 Raw mat.-recycling		25.4	.0	.0	.0	.0	45.0		45.0	
	Raw mat.	25.4	.0	.0	.0	.0				
3.4 Tech. standards		21.2	180.0	.0	.0	10.0	.0		180.0	
	CBR	5.3	59.2	.0	.0	10.0				
	Ref. mat. JRC	15.9	120.8	.0	.0	.0				

(\*) See Table 2.

TABLE 8 :

ACTIVITY 4 : EXPLOITATION AND OPTIMUM USE OF BIOLOGICAL RESOURCES.  
General overview - 31 December 1988

( M i o e c u s )

Activity (Framework Programme)	Programme  (*)	Part decided before 1.1.1987	Part decided since 1.1.1987	Council common position	Part proposed by the Commission	Of which overhang	BALANCE	Of which overhang	FP decision	Overhang
4. Bio. resources		29.5	20.0	80.0	180.0	79.2	.0	.0	280.0	79.2
4.1 Biotech.	Biotech. BRIDGE	20.0 20.0 .0	20.0 20.0 .0	.0 .0 .0	100.0 .0 100.0	37.0 .0 37.0	.0	.0	120.0	
4.2 Agro-ind. tech.	ECLAIR FLAIR	.0 .0 .0	.0 .0 .0	80.0 80.0 .0	25.0 .0 25.0	33.2 25.0 8.2	.0	.0	105.0	
4.3 Compet. agric.	Ag. research	9.5	.0	.0	55.0	9.0	.0	.0	55.0	
		9.5	.0	.0	55.0	9.0	.0	.0		

(\*) See Table 2.

T A B L E 9 :

ACTIVITY 5 : ENERGY.  
General overview - 31 December 1988

( M i o e c u s )

Activity (Framework Programme)	Programme (*)	Part decided before 1.1.1987	Part decided since 1.1.1987	Council common position	Part proposed by the Commission 2)	Of which overhang	BALANCE	Of which overhang	FP decision	Overhang
5. Energy		592.0	920.9	122.0	50.5	59.1	79.6	25.7	1173.0	84.8
5.1 Fission : nucl. safety		107.8	309.9	.0	50.5	8.0	79.6		440.0	
	Radioactive waste	30.3	.0	.0	.0	.0				
	Decommissioning	1.3	.0	.0	31.5	5.0				
	TELEMAN	.0	.0	.0	19.0	3.0				
	Fission JRC	76.2	309.9	.0	.0	.0				
5.2 Contr. themanucl. Fusion		396.5	611.0	.0	.0	50.0	.0		611.0	
	Fusion SCA	380.3	551.0	.0	.0	50.0				
	Fusion JRC	16.2	60.0	.0	.0	.0				
5.3 Nonnucl. energies		87.7	.0	122.0	.0	1.1	.0		122.0	
	Nonnucl. en. SCA	80.0	.0	.0	.0	.0				
	JOLIE	.0	.0	122.0	.0	1.1				
	Nonnucl. en. JRC	7.7	.0	.0	.0	.0				

(\*) See Table 2.

T A B L E 10 :

ACTIVITY 6 : SCIENCE AND TECHNOLOGY FOR DEVELOPMENT.  
General overview - 31 December 1988

( M I O E C U S )

Activity (Framework Programme)	Programme	Part decided before 1.1.1987	Part decided since 1.1.1987	Council common position	Part proposed by the Commission	Of which overhang	BALANCE	Of which overhang	FP decision	Overhang
6. S/T for development	(*)	.0	80.0	.0	.0	.0	.0	.0	80.0	.0
	STD	.0	80.0	.0	.0	.0	.0	.0	80.0	.0

(\*) See Table 2.

TABLE 11 :

ACTIVITY 7 : EXPLOITATION OF THE SEA BED AND USE OF MARINE RESOURCES.  
General overview - 31 December 1988

( M i o e c u s )

Activity (Framework Programme)	Programme	Part decided before 1.1.1987	Part decided since 1.1.1987	Council common position	Part proposed by the Commission	Of which overhang	BALANCE	Of which overhang	FP decision	Overhang
7. Marine resources	(*)	.0	30.0	.0	50.0	16.5	.0	.0	80.0	16.5
7.1 Marine S/T	MST	.0	.0	.0	50.0	10.0	.0	.0	50.0	
7.2 Fisheries	Fish. res.	.0	30.0	.0	.0	10.0	.0	.0	30.0	
		.0	30.0	.0	.0	6.5	.0	6.5		

(\*) See Table 2.

T A B L E 1 2 :

ACTIVITY 8 : IMPROVEMENT OF EUROPEAN S/T COOPERATION.  
General overview - 31 December 1988

( M i o e C U S )

Activity (Framework Programme)	Programme (*)	Part decided before 1.1.1987	Part decided since 1.1.1987	Council common position	Part proposed by the Commission	Of which overhang	BALANCE	Of which overhang	FP decision	Overhang
8. Eur. S/T cooperation		26.6	167.0	36.0	71.0	59.7	14.0	9.6	288.0	69.3
8.1 Stimulation		25.0	167.0	6.0	.0	40.0	7.0 (**)		180.0	
	STIMULATION/SCIENCE	25.0	167.0	.0	.0	38.0				
	SPES	.0	.0	6.0	.0	2.0				
8.2 Use major install.	Support major fac.	.0	.0	30.0	.0	7.0	.0		30.0	
		.0	.0	30.0	.0	7.0				
8.3 Forecast.-assess.		1.6	.0	.0	26.0	5.7	-3.0 (**)		23.0	
	FAST	1.6	.0	.0	.0	.0				
	MONITOR	.0	.0	.0	22.0	4.7				
	DOSES	.0	.0	.0	4.0	1.0				
8.4 Diss.-util. S/T results	EUROTRA former prog. VALUE	.0	.0	.0	45.0	7.0	10.0		55.0	
		.0	.0	.0	7.0	.0				
		.0	.0	.0	38.0	7.0				

\*) See Table 2.

\*\*) 3.0 MioECUS has been transferred from 8.1. to 8.3. which corresponds to 2% and 13%, respectively, of the amounts deemed necessary for these subdivisions.