COMMISSION OF THE EUROPEAN COMMUNITIES

SEC(91) 1016 final

Brussels, 7 June 1991

COMETT I

FINAL REPORT OF THE COMMISSION

(1986-1990)

CONTENTS

FOREWORD

This report concerns the first phase of the COMETT Programme (COMETT I) (1986-1989). It documents the background to the programme, its rationale, structure and implementation, with particular regard to its impact in the different operational Strands. It is a synthesis of a great deal of documents, reports, surveys, studies and analysis undertaken throughout the first operational phase. Those activities helped to evaluate the importance and value of the COMETT Programme, which was clearly confirmed by the Decision to implement a second phase of the programme (COMETT II), adopted by the Council of Ministers on 16 December 1988 and coming into effect at the beginning of 1990.

This report has been prepared in March 1991. The Commission will be complementing this report with the issue in June/July 1991 of two further more detailed documents on the development of COMETT:

- *the report of an external evaluation of COMETT undertaken during January-June 1991, which examines COMETT I in particular but also its transition into COMETT II*

- *an extensive internal monitoring report, based on the final reports of the projects financed during COMETT I, including final data on COMETT I and a detailed analysis of the situation of COMETT in the Member States.*

This report cannot be exhaustive and highlights only the key points regarding the development of the COMETT I Programme. The report attempts to provide a solid basis for discussion of the Programme's first phase of development as well as references on how and where to obtain further information.

I. EXECUTIVE SUMMARY

1 COMETT I, the Community Action Programme for Education and Training for Technology, was adopted by the Council Decision 86/365/EEC of 24 July 1986. The decision about the COMETT Programme must be considered in this context and as an extension of a series of Community initiatives, namely the Framework Programme actions in the field of R&D, the Community actions with regard to education and training, in particular the ERASMUS and EUROTECNET programmes, and the strategic Community Programme in favour of SMEs. The estimated budget for COMETT I mounted to 45 million ecu.

2 Following a short preparatory phase in 1986, the COMETT I programme became operational in 1987 for three years (1987-1989). During this period more than 1300 projects were launched across the Community as a whole and the total level of Community support was over 52.5 million ecu. The projects supported under COMETT I led to the establishment of 125 university-industry consortia (UETPs: University/Enterprise Training Partnerships); more than 4.000 student placements within enterprises in other Member States; 232 fellowships for staff exchanges between universities and enterprises; and financial support for 329 joint continuing training projects and multinational initiatives to develop multimedia training systems. In addition, over 6,000 enterprises, 1,500 universities and 1,000 other types of organisations participated in the implementation of COMETT I projects. Many of these projects continued to run up to September 1990.

3 By the end of 1989 the first "Evaluation of the COMETT Programme", which had been carried out by Coopers & Lybrand in association with the Science Policy Research Unit of the University of Sussex had been published. The conclusion of this study was very encouraging and satisfactory. It confirmed that COMETT has had a powerful influence in alerting the educational sector and, to a lesser extent, industry to the benefits of training in a Community and cooperative framework. It has helped to break down insular attitudes.

4 In the third year of COMETT I, the second phase of the programme, COMETT II, was adopted by the Council, confirming its success and usefulness. The programme had attracted the EFTA countries' interest, which started negotiations with the European Commission in order to being able to participate and cooperate on a European scale in training for technology. The initial budget estimate for the five years period (1990-1994) of COMETT II is 200 million ecu, which in relative terms represents four times more than the budget of the first phase. The experiences made and the analyses undertaken in the first years of COMETT allowed the definition of a refined and more directive policy. Thus the last year of COMETT I has been an extraordinary challenge and double achievement as the final phase was to be managed and the second phase to be launched.

5 In conclusion it can be said that COMETT I projects were making significant contributions to the development of joint university-industry European initiatives in advanced technology training. These initiatives have led to major contributions in terms of the quality and quantity of education and training delivered.

6 The planning and preparation for the launch of COMETT II itself generated a wider interest and commitment, in both universities and enterprises, to the fulfilment of COMETT objectives - either through participation in a COMETT II proposal or exploitation of outputs from COMETT I activity.

II. Background of COMETT

7 The Commission has long recognised that it is a central and urgent priority for the European Community to ***improve its technological base***. If Europe is to renew its competitive strength it must quickly begin to generate stronger technological cooperation. The Commission and the Council have already agreed on the necessity to exploit the potential which is there, by means of a substantial commitment to scientific and technological research within the Framework Programme. This substantial commitment must be matched by an equally vigorous policy of ***investment in the Community's human resources***.

8 The rapid development of new technologies requires that both young people and adults be better trained and prepared to cope with change throughout their careers. Skill, versatility and enterprise are more than ever at a premium. Without them Europe will be unable to stimulate growth or new opportunities for employment; it will fail to compete in the production of modern technology or to make the best use of its many and varied applications.

9 In all Member States some effort is now being applied to making training systems more responsive to the longer-term requirements of industry. The need for greater cooperation between public authorities, industry and the social partners is more and more widely recognised and advocated. More action is needed in the area of third level education and training, since universities and higher education institutions are chiefly responsible for providing the initial, and subsequent mid-career, training of many of the highly skilled technicians, engineers and researchers, together with those who become managers.

10 It is particularly important to ensure that industry will be able to seize the opportunities that will follow the ***completion by 1992 of the internal market*** in the Community. In reducing the obstacles to innovation and to the sound application of new technologies, COMETT will complement the competitive advantages to be gained from the establishment of the internal market.

11 Existing and anticipated human resource requirements for new technologies at advanced level (engineers, scientists, high level technicians) clearly exceed current higher education outputs, both quantitatively and qualitatively. Skills deficits can be related in part to the ***output of qualified people from the higher education sector***, and in part to the lack of ***adequate training and retraining arrangements*** by the firms themselves. The problem is as such qualitative and quantitative.

12 Links between university and industry bring benefits to both sides. On the one hand, industry gains access to knowledge, research and facilities in higher education; a spur to innovation and increased efficiency, and faster access to teaching and training programmes. Many companies, especially small and medium-sized find difficulty in securing access to the specific expertise they need especially if they have to pay for it on a full-cost basis. On the other hand partnership can offer to those in higher education the chance to learn from the latest industrial development; practical opportunities for students to study new production processes and techniques in the workplace, and, for teachers, an opportunity to develop and diversify their essential vocation and to work with equipment which is often not available in universities.

13 The Commission's widespread consultations confirm that both industry and the universities recognised the urgent need for intensified cooperation, at local and regional level and across national frontiers. It is acknowledged that although some innovations as regards cooperation in advanced training have been taking place, they are sporadic and smallscale, and lack any form of Community dimension or provision for exchanges of information and experience. Consultations have also confirmed that cooperation should be based on voluntary initiatives, enabling the rich diversity of university systems in the Community to be protected, and allowing each partnership arrangement to establish its own distinctive mission. It is in this context that the Council decided to launch the COMETT Programme.

III. The COMETT Programme

History

14 COMETT I, the Community Action Programme for Education and Training for Technology, was adopted by the Council Decision 86/365/EEC of 24 July 1986. Following a preparatory year in 1986, the operational phase of the COMETT I programme was for three years (1987-1989).

Objectives

15 The objectives of this programme as provided in the Decision of the Council were as follows:

- to give a European Dimension to cooperation between the university and the enterprise in the field of training relating to the innovation, development and application of new technologies;
- to favour the joint development of training programmes and exchanges of experience, as well as maximum use of resources regarding training at a Community level;
- to improve the offer of training at a local, regional and national level with the competition of interested parties therefore contributing to the balanced economic development of the Community.
- to develop the level of training to meet technological and social changes, by identifying the resulting priorities in the existing set up of training and which require additional action both in the Member States and at a Community level, and by favouring the equality of opportunities between men and women.

The operational components of COMETT

16 COMETT I focused on five interrelated areas of action, each of which constitute a Strand within the programme as a whole:

Strand A:	the development of University-Enterprise Training Partnerships (UETPs) in the framework of a European network
Strand B:	schemes for the exchange of students and personnel between universities and enterprises
Strand C:	the development and testing of joint university-enterprise projects in the field of continuing training
Strand D:	multilateral initiatives for the development of multi-media training systems
Strand E:	complementary information and evaluation measures designed to support and monitor developments of relevance to the COMETT Programme.

The operational support for the programme

17 COMETT Committee

In the implementation of the COMETT I Programme, the Commission was assisted by the COMETT Committee. The Committee was made up of two representatives from each Member State on the basis of nominations made by the Member States. The Commission chairs the Committee and provides its secretariat. The Commission had the responsibility of consulting the Committee on any matter concerning the implementation of the COMETT Programme. The Committee delivers opinions, in particular on the general guidelines governing the COMETT Programme, the general guidelines for the financial assistance to be provided by the Community, the procedure for selecting the various types of projects and any measures which require a Community contribution of more than 100,000 ecu.

18 During COMETT I, the COMETT Committee held 8 formal and 3 informal meetings and proved to be an effective and supportive mechanism for the development of the Programme. Its meetings in particular assisted the Commission in ensuring the balanced development of the Programme and also provided a regular channel through which the university-industry questions arising from the Programme could be addressed at Member State level.

19 COMETT Information Centres

To facilitate and promote the dissemination of information about COMETT, national Information Centres were established within each Member State. The Member States were responsible for the designation of the organisation to act as the Information Centre, and the precise organisational location of each Information Centre varied between Member States according to individual needs and circumstances. The Commission provided annual funding support towards the costs of activities undertaken by the Information Centres. In addition, the Commission supplied various forms of documentation, services and promotional material for use by Information Centres. The Commission held regular meetings with the Information Centres, which in turn provided the organisational support for official meetings and conferences on COMETT in individual Member States.

20 Experience of COMETT I demonstrated the importance of decentralised information support for programme implementation. Where Member States invested with the Commission in such infrastructure, there were rewards in terms of the quantity and quality of the projects developed and in regard to the subsequent networking of COMETT projects at Member State and Community levels.

21 COMETT Experts' Group

The Commission established the COMETT Experts' Group as an additional source of specialist technical advice and expertise. Members of the Group were appointed on the basis of their personal knowledge of a particular technical area or sector related to COMETT. The breadth of membership was such that there was at least one Expert from each participating country, thereby ensuring awareness of the level of technology exploitation in all regions. The Experts met twice a year. Their annual formal meeting had as its main objective to examine the project proposals received by the Commission under the Calls for Applications. A second informal meeting was held each year in the later stages of COMETT I to review general programme development. The Experts' role in programme monitoring helped to ensure that the Commission was able to select the most appropriate range of projects to achieve COMETT objectives.

22 Technical and logistic support

The implementation of COMETT was undertaken with the assistance of the COMETT Technical Assistance Unit. The services provided by the external Unit included the processing of project applications, administration of contracts, technical analysis of interim and final reports from projects, information and publicity. The staff of the Unit, drawn from a range of Member States, also provided other technical services as required by the Commission.

Selection of COMETT Projects

23 There were four Calls for Applications under COMETT I. The first and second Call of Applications took place in the first operational year of COMETT (1987). Both Calls were open Calls for Applications, which meant that projects could be submitted under all Strands. The third Call for Applications took place in 1988. Under that Call, the University-Enterprise Training Partnerships (UETPs) could apply for a "pool" of student placement grants under Strand Ba. The 1988 Call was again an open Call, combining funding for new projects under all Strands and renewal projects, i.e. a second year of funding for projects in 1987 under

Strands A, C and D. The fourth and last Call for Applications under COMETT I was in 1989 and was a restricted Call for Applications. It invited applications under Strands Ba and Bb only, and extended the "pool" arrangements for student placement grants. In Strands A, C and D, the projects already accepted were able to apply for a further year of funding.

24 In each Application Round, the selection process consisted of the following stages:

24.1 First, the assessment of the applications was undertaken by the services of the Commission, with the support of the COMETT Technical Assistance Unit. This procedure enabled all ineligible applications to be removed at an initial phase (eg because of the non-transnational nature of the project, the lack of a university-industry partnership). During this stage, an initial selection scenario is developed as the framework for discussions during subsequent stages. The criteria used for the selection of projects were those given in the Guides for Applicants issued for each Call for Applications.

24.2 The next stage was concerned with achieving coherence and synergy with other Community programmes - those falling within the Framework Programme of Research and Development as well as those directed towards specific sectors, such as the strategic programme in favour of small and medium-sized enterprises. The inter-services consultation set up for this purpose assisted in identifying from among the projects put forward those which, from the point of view of the other Community programmes, represented special interest - in other words, favouring synergies.

24.3 The selection strategy and proposed decisions on individual projects were then considered by the COMETT Experts' Group. The procedures for this were progressively refined during the various selection rounds.

24.4 The proposed draft list of accepted projects was then drawn up and submitted to the COMETT Committee for their view. As provided for in the COMETT Decision, specific arrangements were made to permit discussion by the Committee of projects for which a Community contribution of more than 100,000 ecu was proposed.

24.5 Finally, the Commission, taking into account the views expressed by the COMETT Committee, decided upon a final list of projects for Community support.

25 The above process, which requires approximately four months, illustrates the consultations which are necessary in order to achieve a balanced selection result which takes account of the diverse interests in the Programme. COMETT is a wide-ranging and complex programme which requires wide consultation, and the procedures developed are considered to have been effective and indeed provide a model for coordinated programme implementation.

IV. Development of COMETT

Development by Application Round and Strand

Strand A (University-Enterprise Training Partnerships)

26 Arguably, the most innovative and challenging aspect of COMETT for future patterns of university-industry cooperation in the longer term is its support for University-Enterprise Training Partnerships (UETPs). These partnerships bring together groups of universities, companies (large and small), professional organisations, regional and other organisations as a focus for dialogue and action on skills and training requirements. COMETT I provided support for three broad types of UETPs. Regional UETPs are confined to a particular

geographical area and are not required to have a transnational membership. Sectoral UETPs are more transnational in membership and scope, but limit their activities to a certain technology area, industrial sector, or training theme. Mixed UETPs combine regional and sectoral characteristics.

27 Under COMETT I, 125 University Enterprise Training Partnerships (UETPs) were funded. 79 were accepted in the first application round (1987), 28 in the second application round (1987), and 19 in the third application round (1988). More than 60% of the UETPs were therefore based on submissions in the first round. In fact, in the first round one out of two UETP proposals were accepted. Compared to other Strands, this represents the highest success rate in COMETT I. It was a deliberate selection policy to approve a high number of UETPs in the start phase of COMETT, particularly regional UETPs (which were well represented in the first round). The pattern of predominantly regional UETPs was complemented by a significant number of sectoral UETPs and further regional UETPs in the subsequent application rounds in 1987 and 1988. The distribution of UETPs by Member State is given in the Statistical Annex.

28 The 125 UETPs funded under COMETT I were distributed as follows: 66 UETPs were regional, 31 UETPs were sectoral and 28 UETPs were of a mixed nature, which means that about one in two UETPs was regional in nature, one in four was sectoral and another quarter was of a mixed nature.

29 Although the number of UETP proposals was impressive, funding limits and the lack of good quality projects in certain regions did not permit full regional coverage of UETPs across the 12 Member States. Taking into account the pattern of regional and mixed UETPs, it is possible to distinguish the following typology:

- countries where theoretically there was more or less complete geographical coverage: Ireland and the United Kingdom
- countries with extensive geographical coverage but where there were some gaps: Spain, France, Luxembourg and Portugal
- countries with significant regional coverage, but with more significant gaps: Belgium, Denmark, Federal Republic of Germany and Italy
- countries where the coverage was rather random and therefore left significant areas which were not covered by UETPs: Greece and the Netherlands.

Overall, in about two-thirds of the European regions there was a regional UETP, although not all of them had the same broad scope and potential impact. However, in the latter stages of COMETT I measures were taken to stimulate UETP development in the weaker areas, and this was to result in an even more impressive regional and sectoral spread in COMETT II.

30 Given that the number of sectoral UETPs in COMETT I was relatively limited, it would be premature to speak of a sectoral network as such under COMETT I. The funding limits and the priority given to regional UETPs in 1987 led to the acceptance of a wide spread of sectoral UETPs in 1988 so as to prepare the ground for more concentrated efforts in the medium term. The sectoral network was considerably strengthened in 1988, but remained less developed than its regional counterpart. The technological and industrial sectors represented were as follows:

- 9 UETPs in the broad field of *Information Technology* (including areas such as Data Processing, Software Technology, Expert Systems, Telecommunications);
- 7 UETPs concerned with training in *Microelectronics Technology* (in particular Semiconductor Technology, VLSI and ASICs Design);
- 7 UETPs in areas of *Advanced Manufacturing Technology* (Automation, CIM, Robotics);
- 6 UETPs in *Biotechnology and/or Agro-food* training;
- 3 or 4 UETPs in each of the following areas : *Mechanical Engineering, Energy,*

Environment, Materials, Textiles, Mathematics, Training Technology;

- 2 UETPs in each of the following sectors: *Marine Sciences and Offshore, Civil Engineering, Quality, Pharmacy, Chemical Engineering;*
- 1 UETP in: *Graphic Information Technology, Coal Technology, Electrical Engineering, Regional Planning, Product and Process Management, Wood Technology, Biology and Medicine, Innovation Management, Aeronautics and Maintenance, Finance, Law and Information Technology, Women and Technology.*

Most sectors related to technology fields rather than to specific industrial sectors. It should also be noted that all regional UETPs had specific sectoral activities, depending on the industrial needs of their region. In general, these fell under the broad classes of Information Technology and Production and Manufacturing.

31 The pattern of sectoral and mixed UETPs showed that there were important gaps to be filled and that more industrial backing was needed. The need for balance across the Member States led to the selection of some sectoral UETPs in Member States where there were few strong regional UETP candidates. In several cases, this meant that there was a discrepancy in the level of those sectoral UETPs in comparison with other sectoral candidates coming from other Member States.

32 The overall architecture of the COMETT I Programme means that the different Strands of the programme are mutually supportive. The UETPs were not surprisingly heavily involved in the other Strands of COMETT, as can be seen from the following data:

32.1 *Strand Ba (Student Placements in Industry)* saw the greatest involvement of UETPs. No less than *89 UETPs* arranged student placements, in particular through the pool arrangements (84 UETPs). The fact that in 1989 the Call for Applications was restricted to Strand B provided an important impetus for student placement activity, both for UETPs accepted in 1987 (which built on their experience) and for 1988 UETPs (for which Strand B was the only additional resource possibility under COMETT in 1989). The regional UETPs were the most active partnerships in regard to student placements, with almost all of them developing student placement programmes, while only two out of three sectoral UETPs and less than half of the mixed UETPs were so engaged.

The Member States where the UETPs were less actively involved in student placement activity were Belgium, Denmark, Greece and Italy. These were countries with little student placement tradition. However, this situation was to change as COMETT progressed, especially in Spain, where the strong involvement of Spanish UETPs has considerably increased the level of student placement activity. Throughout COMETT I, more than 4.300 students were placed with the assistance of the UETPs.

32.2 Of all Strands, *Strand Bb (Personnel Exchanges)* was the COMETT facility least used by the UETPs. Nevertheless, *40 UETPs (32 %)* were involved in COMETT personnel exchanges. The strongest interest was in the UK, Spain and Greece, within only a few UETPs in the other countries being involved.

32.3 *88 UETPs (70.4 %)* were involved in *Strand C projects (Joint Training Actions)*, with an even distribution across regional, sectoral and mixed UETPs. In every Member State, more than half of the UETPs participated in Strand C projects. In addition, several were involved in training actions outside the COMETT framework.

32.4 *33 UETPs (26.4 %)* participated in *Strand D projects (Distance Learning and Multimedia Systems).* Most of these (24) were regional UETPs. More specifically, 22 UETPs had an explicit involvement in multimedia developments.

To this extent, the UETPs have become the very backbone of the programme, being an essential carrier for the specific training actions and acting as a highly localised filter and catalyst for stimulating, executing, and evaluating university-industry cooperation both regionally and sectorally.

33 Overall, COMETT I saw the development in a relatively short time of a significant number of UETPs, most of which were innovative and difficult ventures which required new forms of cooperation and investment. It was clear from the monitoring and evaluation that it would require years rather than months to reap the benefits from this investment, and the later development of COMETT II allowed the longer timeframe and the higher financing provision which would give greater chances of achieving a stable network of UETPs. The restricted possibilities under COMETT I were nevertheless well used, with 74 of the UETPs created surviving into COMETT II.

Strand Ba (Student Placements in Industry)

34 During COMETT I, financial support for student placement in industry was provided in two different ways. From the very first application round, contracts could be made with specific universities or enterprises to support specified student placements (the so-called "free movers"), whereas from 1988 contracts were also made with accepted UETPs to provide blocks of student placement grants to be used flexibly for various student placements (the so-called "pool" arrangements). The pool arrangements were introduced in the third Application Round in order to allow more flexible and rapid funding for placements. In the early application rounds, "free mover" promoters had to identify the specific company for each named student at the time of application, and this was felt to be too rigid. While still having to fulfil the same quality criteria, the procedure for checking compliance with the basic conditions became a retrospective rather than an advance process. UETPs were entitled to apply for a pool of student placement grants. Additionally, the pool was intended to facilitate the administration of student placements for the Commission itself.

35 Whereas in 1987 and 1988 the number of student placements applied for remained more or less stable (with only a slight decrease from 4972 to 4837), the demand really took off in 1989, with 8237 being sought. One of the main reasons for this development was the introduction of the pool arrangements. The number of applications for "free movers" decreased considerably when the pool system was introduced. However it should be noted that in countries with a certain tradition of student placements or in countries where the UETP network had not been very elaborated, the free mover scheme remained very important. In the third application round (1988), when the pool system was introduced, as many as 67 out of 108 UETPs applied for 2130 student placement grants. This figure more than doubled in the fourth application round, when 92 out of 125 UETPs requested support for 5018 placements.

36 These figures on student placements requested are to some extent reflected in the exchanges actually accepted. Over the three years of COMETT I, a total of 4298 student placements was achieved. This corresponds with 1067, 1240 and 1991 students in 1987, 1988, and 1989 respectively. Whereas in the first two rounds of 1987, 20.4% of the placement applications were selected, there was an increase of 22.3% in the allocation of grants in 1988, although - as was outlined above - there had been a slight drop in the overall number of projects applied for. The reasons for this were the relative quality of the applications submitted, since in the 1988 applications the specific criteria for student placements were more closely observed than had been the case in 1987.

37 The allocation of grants in the fourth round reflected the enormously increased demand. Although the grants approved in 1989 still represented a relatively low success rate of 24.2%, this was an important increase, with the number of grants increasing by 96.5% in comparison with 1987 and by 60.7% in comparison with 1988. The UETPs played an enormously important part in this development. Their share of 61.9% in the grants awarded in 1988 rose even further

and reached 81.4% in the final application round of COMETT I in 1989. In other words, in the budget period of 1989/90 four out of five COMETT placement students were exchanged through the UETPs.

38 The student placement dimension in COMETT I provided an important stimulus for universities to develop structured work experience opportunities for students as part of their degree programmes. Under the COMETT criteria, such placements abroad must be of substantial duration, coherently related to the study programme, where possible academically recognised, and well prepared linguistically. In addition to supporting the development of such placements abroad in higher education systems without such traditions, COMETT I also made an important contribution to European infrastructure for such placements by creating the pool system. The pool system is carried by the UETPs and is creating a durable basis for locating, funding, and supervising placements abroad on a mutually supportive basis. This system should be seen as having an important impact on regional development, with the stimulus to reciprocity between regions through sending and receiving placement students. Finally, one should note the take-up by industry of the COMETT placement system, where several large multinational companies, concerned to internationalise their graduate recruitment, collaborated with the UETPs in order to receive foreign placement students into their companies.

Strand Bb (Transnational Fellowships)

39 In the four rounds of COMETT I, 14, 48, 71 and 88 projects respectively were accepted under Strand Bb, corresponding overall to 232 fellowships for personnel exchanges between universities and enterprises. The UETPs themselves in many cases offered structures which were well adapted to arranging and monitoring such exchanges through their university members.

40 The fellowships contributed significantly towards encouraging transnational university-enterprise cooperation. In many cases, the transnational exchange occurred in association with the implementation of joint university-enterprise training projects, some funded by COMETT, others not. Certain fellowships also played a role in strengthening relations between COMETT consortia, as a result of new contacts established while seeking receiving organizations or, more importantly, as a result of the development of training projects implemented during the placement period.

41 The fellowships served important training needs of both university and industry staff, such as updating and development of knowledge relating to advanced technologies and the most recent R&D results in limited and specialized fields of equal interest to both university and enterprise. In so doing, the fellowships were also transferring this knowledge between the different Member States. It also helped to create new links between universities and enterprises during the placements, giving a point of contact in another country which was to aid the future development of the enterprise or training establishment.

42 It should be noted, however, that in a fairly high number of cases there was a strong tendency for the development of specialized knowledge by the grantholder to be the only aim, without this knowledge being disseminated at later stages. Given the COMETT objective of training in new technologies at a transnational level and the need to maximise the potential impact of such fellowships, selection policy was adjusted throughout COMETT I to ensure that preference was given to fellowships which were better integrated into the general dynamic of the programme (eg by being associated with a project in another Strand), thereby helping to strengthen university-enterprise cooperation and contributing towards the development of training actions.

Strands C and D (Joint Training Projects and Multilateral Initiatives for Multimedia Training Systems)

43 The common feature of these two Strands was the support for training projects developed and implemented by transnational partnerships of universities and enterprises. Such projects ranged from short training courses, through more substantial training materials development (with or without a multimedia dimension), to structural initiatives towards providing training networks in specific fields. The two Strands are presented together in this report in view of their essentially common aim and format.

44 In 1987, 137 projects were accepted under Strand C, of which 126 were renewed in 1988. In the third round (1988), 97 new Strand C projects were accepted. In the fourth round (1989), 178 renewal projects were supported. In Strand D, a total of 89 projects were finally supported, more or less evenly distributed across the first three application rounds in 1987 and 1988. 57 Strand D projects were accepted in 1987 and were allocated renewed funding in 1988. Additionally, 32 new Strand D projects were accepted in 1988. In the fourth application round (1989), 75 Strand D projects were given renewed funding.

45 With regard to the nature of the projects, short training courses were predominant, significantly increasing in volume since 1987. In the 1987/88 period, the number of seminars organised amounted to 200, while the corresponding figures for the 1988/1989 and 1989/90 periods were over 800 and 928 seminars respectively under Strand C, giving a total of 1928 seminars over COMETT I as a whole. In terms of participants, the progression is even clearer, since the 1987/88 figure of 5,000 course participants more than triples in 1988/89 to 16,400 and reaches 19,500 participants in 1989/90, bringing an overall total of 40,900 course participants in COMETT-supported short courses. The average length of the short courses was 34 hours in 1988/89, but rose to 42 hours in 1989/90. The number of trainee hours more than doubled from 200,000 in 1987/88 to 414,000 in 1988/89, and reached 724,000 in 1989/90, giving an overall total for the duration of COMETT I of 1,338,000 trainee hours. It is also important to underline that in the last year of COMETT I (1989/90), the proportion of female participants in the courses mounted to 20%.

46 More substantial joint training projects represented a major portion of activity throughout COMETT I, in particular through the development of a large number of multimedia training products, which necessitated market analysis before being disseminated on a wide scale. Within Strands C and D together, approximately 1,000 different training materials were developed. The major part of these materials remains of a traditional nature, with a predominance of written materials. However, we see the gradual emergence of other types of materials such as videos, specific teaching software, and, to a lesser extent, interactive video. As to the means of disseminating these materials, these remain relatively traditional (dissemination through local instructors or postal distribution), even although new techniques (via satellite, cable networks, teleconference, with or without electronic mail support) are beginning to develop significantly.

47 There were very few technological sectors that were not covered. The main sectors were Advanced Production and Manufacturing, where Automation and Advanced Manufacturing, Mechanical Design and Analysis, and Microelectronics Technology were most frequent. The Management sector was second in importance, with almost exclusively Production Planning and Innovation Management, then Occupation of the Earth Surface, mainly Architecture and Applications of Biology and Chemistry, and Information Technology (data- and information processing).

48 The internal monitoring process drew several general conclusions from the development of the joint training projects, particularly in regard to the relative roles of university and industry in the training, development and implementation. Cooperation between university and industry is at its most intensive in the preparation and coordination of seminars and in actual participation in teaching, where the investment contributed by the two sides is more or less

evenly balanced (40% for the universities and 40% for industry). Furthermore, the continuing training aspect of the seminars is reflected in a large majority of participants from industry (70%). However, the far from marginal presence of university participants (20%) may be regarded as an indication of the developing continuing training needs ("training of trainers"), especially where provided at European level.

49 The origination of training materials occurred more in the universities (47%) than in industry (37%), although it should be pointed out that industry's investment in teaching materials was far from negligible. Great care is needed in making such analyses, since the industry partners in projects can be either users of training materials or the very developers and distributors of such training materials (eg training companies). As regards experimentation of the training materials, there was, perhaps surprisingly, an equal level of involvement on the part of universities (41%) and industry (42%). Experimentation in this sense includes both a phase of technical validation of the product and a phase of validation of the content in terms of bringing the product in line with the company's real needs.

50 As regards dissemination of the training products, it was possible to detect a strong involvement (in 43% of all projects) on the part of the universities. As regards enterprises, the equivalent figure of 35% covers both large enterprises with their own internal dissemination system and those enterprises acting as distributors of materials. A qualitative analysis of the links between joint training projects and UETPs showed that in two out of three cases, the joint training projects had no direct links with UETPs. Specific actions were launched later in COMETT to assist UETPs in becoming more involved in the marketing and dissemination of training products emerging from Strands C and D.

51 Summarising the overall development in Strands C and D, the COMETT funding permitted the development of a large number of promising projects characterised by the following elements which can be considered as likely to ensure future success:

- active involvement of enterprises, even although their actual financial contribution is not at the level expected and it remains questionable whether the companies involved consider involvement in such projects as an investment
- meeting skills deficits, preferably following systematic prior analysis of the training needs (especially in Strand D)
- transfer to peripheral regions
- the training of trainers dimension (more so in Strand D).

The monitoring and evaluation of project development highlighted the following five areas of reflection for future developments:

51.1 Multimedia and SMEs / Training of Trainers

The multimedia component occupies common ground between two great concerns of COMETT, namely training within SMEs (about which much is talked but little known) and the training of trainers working within this industrial context. The development of new training techniques and technologies will offer new possibilities, but will require also the creation of the right pedagogic and learner support mechanisms within those enterprises. A number of COMETT projects were specifically addressing these issues.

51.2 Mechanisms for diffusion and commercialisation of training products

The great potential role of the UETPs should not be forgotten here, especially given the wide sectoral and regional coverage attained in COMETT, and given the scope for reducing duplication of effort through efficient information exchange. However, there are major questions to be resolved regarding the technical, cultural, and linguistic transferability of the training products. The final important area for further examination is intellectual property and copyright.

51.3 Tutorial and support mechanisms

This aspect, particularly fundamental to sustained and effective distance learning, still merits greater attention within many of the projects. New media and new technology are not themselves automatically new training tools.

51.4 Impact on practice within universities

Given the development of new multimedia tools and the development of continuing training generally, the changing role of the universities demands greater powers of adaptation and flexibility. Multimedia tools can have a significant impact here by enabling universities to offer training to a greater public and in different ways dependent on the learner group. There are applications for both initial and continuing training.

51.5 Evaluation mechanisms and methods

The triangle between media, user, and training process requires greater appreciation of the relative nature of multimedia applications. There is a need for more examination of the criteria for selecting particular training tools for particular purposes, training levels, sectoral contexts, and overall company strategies. There is also the need to further develop and apply clear quality criteria for multimedia training products.

52 Overall, the three years of development have allowed the establishment of new approaches to training at European level. One of the main challenges remains the progressive change of behaviour and attitude from both the university and industry sides, and in that respect the specific results of individual projects are not the only gain from COMETT collaboration. It is difficult to measure the other spin-off effects generated by the project cooperation, but it is clear that the partnerships created through COMETT will in many cases bring longer-term benefits in other areas and activities.

Development of COMETT in the Member States

53 COMETT is a programme of transnational actions in which it is not possible to measure perfectly the relative contributions of specific Member States. Despite this, it is important to outline how COMETT has developed in each Member State, especially since COMETT's stimulus to university-industry cooperation will only bear fruit in the longer term to the extent that policy and practice at Member State level are influenced. Overall, the COMETT I Programme was implemented with a clear intention of achieving balanced development in the Member States, and it is a success of the Programme that all Community countries were able to achieve significant take-up of COMETT projects in all Strands of the programme. Where specific weaknesses and gaps existed, these were addressed by undertaking bilateral discussions with Member State authorities in order to mount appropriate information and stimulation measures. The success of such development actions was seen in the latter years of COMETT I, but also more significantly in the first year of COMETT II, when even more solid patterns of participation were achieved.

54 A brief outline of the situation in specific Member States follows ([1]).

- **Belgium**

The Belgian participation in COMETT I was quite satisfactory. Strand C was the most motivating component. The Belgian Strand D projects, covering various sectors of activity,

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[1] These statements are necessarily over-simplifications of quite complex national situations. Readers wishing a more detailed account are referred to the more extensive reports on the Development of COMETT (cf. Annex 4).

were of excellent quality. The main reservation concerned the weakness of the UETP network, but in the final phase of COMETT I positive developments were underway.

- **Federal Republic of Germany**

After a relatively low participation rate in the first two years of COMETT I, Germany, with considerable assistance from federal and *Länder* authorities, succeeded in preparing a stable basis of UETPs for COMETT II. The distinguishing feature is not the quantity of COMETT projects, but their quality, which demonstrated serious and gradually improving involvement in COMETT. There was a clear preference for involvement in more applied research-orientated projects.

- **Denmark**

The Danish project profile pointed to the need for better regional coverage and greater participation in Strand B. Stronger industry involvement in Strands C and D were another main concern. Awareness of these problems led the Danish authorities to mount an intensive information policy for the launch of COMETT II which met with great interest and has borne fruit in COMETT II.

- **Spain**

Spanish promoters showed the greatest interest in the creation of UETPs. At official level, special importance was also attached to student placements, where Spain submitted most of its projects. Strands C and D were slower to develop. Spain became increasingly active as COMETT I progressed, and its participation can doubtlessly be qualified as satisfactory given the initiatives of Spanish enterprises to build up transnational relations with the help of UETPs.

- **France**

France has been one of the most active participants in COMETT, with the highest participation rate across the programme as a whole, enjoying exceptional levels of complementary support at national and regional levels. Regional coverage of UETPs, all playing a very active role, was almost complete. The tradition of university-industry cooperation in France facilitated the execution of many projects. In Strands C and D, complementary structures and programmes in the multimedia field supported the successful development of COMETT projects.

- **Greece**

Greek participation in COMETT I was very satisfactory, although as in some other countries such participation only grew after a difficult start. There was a high level of participation in mobility-oriented projects. Strands C and D met considerable response by Greek promoters. The main challenge for Greece in the future has been the strengthening of regional coverage, where the pattern of regional UETPs remained incomplete.

- **Italy**

Italy had a high participation rate in all Strands, except in Strand Ba. Italian enterprises (especially large companies) showed great interest in COMETT, resulting in the highest rate of industry-led projects. Public services also assisted considerably in the launch of the programme in Italy. Northern and central areas remained the most active, pointing to the need for further stimulation measures for the Southern regions.

- **Ireland**

COMETT in Ireland made strong and steady progress throughout COMETT I, especially through a complete regional UETP network. The main issues of concern related to the exploitation of the outputs from existing projects and the need to strengthen transnational activities. High levels of enterprise involvement, with the needs of small and medium-sized enterprises in mind, should also be noted.

- **Luxembourg**

Given the small size of Luxembourg, the country's participation in COMETT was good. As there are many enterprises but a limited higher education system, the formation of a UETP network proved to be problematic. In the other Strands, Luxembourg projects attained their objectives and allowed the participation of many organizations.

- **Netherlands**

In the Netherlands all conditions were present to make a success of COMETT. After a difficult start-up phase in the first year COMETT developed positively in all areas. The Dutch were most active in C projects, which were able to secure industry input, although the participation of larger Dutch companies was rather restricted.

- **Portugal**

Portuguese participation increased gradually in all Strands, especially in Strands A and C. Nevertheless, regional coverage was imbalanced, with projects being concentrated in the Lisbon and Porto areas. Complementary organizations for university-enterprise cooperation facilitated the creation of UETPs. The university base was solid, but with some need for improved enterprise participation.

- **United Kingdom**

The UK was one of the leading Member States in COMETT I. About 16% of accepted projects were led by the UK, and participation of UK organisations in projects generally was equally high. Qualitatively the UK made a strong contribution. This positive profile was also possible thanks to extensive existing patterns of university-industry cooperation and comparatively supple legal and financial frameworks for higher education.

Sectoral analysis

55 Technology in COMETT is divided into nine broad sectors and the distribution of COMETT activity (measured by number of projects) in these sectors was as follows:

1.	Basic Resources	6.1%
2.	Earth Surface	10.8%
3.	Biology and chemistry	11.4%
4.	Production & Manufacturing	24.7%
5.	Information Technology	12.5%
6.	Exact Sciences	5.0%
7.	Management	13.2%
8.	Social & Human Sciences	3.6%
9.	Others	12.9%

The main technology by far is Production & Manufacturing. The strong position of Production and Manufacturing has not changed significantly over the three years of COMETT I. Some other areas are also well represented: Information Technology, Management, Occupation of the Earth Surface and Applications of Biology and Chemistry. However, the number of projects in the other areas are not insignificant. The above areas are in any case quite broad in scope and therefore include many different sub-sectors. The proportion of Social & Human Sciences reflects the trade union proposals accepted, which were concerned with the impact of technological change on industry, work organisation, collective bargaining, and trade union organisation.

Links with other Community Programmes

56 An important aspect of COMETT is the potential it has for synergy with other Community programmes. COMETT complemented the strategic Community approach in the R & D and innovation fields by contributing towards the development of highly qualified manpower necessary for the development, transfer and exploitation of new technologies. Close consultation was established both in the selection of projects and also the ongoing monitoring and animation of the COMETT Programme. COMETT projects also established links between organisations active in a number of Commission R&D Programmes. There was in particular a close link between COMETT and DELTA[2] in view of the complementary objectives of the two programmes in the field of technology support for education and training. Numerous other coordination actions were undertaken during COMETT I in relation to specific Community R&D programmes (notably ESPRIT[3]/VLSI Design and BRIDGE) as well as other Community initiatives, particularly in relation to Regional Development (DG.XVI) and actions in favour of small and medium-sized enterprises (DG.XXIII).

57 In the education and training field, COMETT complemented the activities of the ERASMUS[4] programme for the mobility of university students and the EUROTECNET[5] programme for basic vocational training for the new information technologies. The ERASMUS Programme was adopted by the Council in June 1987 to promote inter-university co-operation and in particular to increase substantially the number of university students carrying out a period of integrated study in another Member State. Although there are a number of important differences between the specific aims, objectives and actions of the two Programmes, both COMETT and ERASMUS have the common policy aim of encouraging students to spend periods of recognised study in other Member States. Close links have therefore been established to ensure close coordination of the overall implementation and monitoring of the two Programmes. In particular, there has been coordination of the selection timetables for both Programmes, as well as detailed monitoring of the decisions on funding for individual projects.

58 The experiences of both COMETT and ERASMUS in regard to the foreign language preparation necessary for successful study abroad contributed significantly to the design and development of the Commission's LINGUA Programme which was accepted by the Council

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2 DELTA - Developing European Learning through Technological Advance. Council Decision 88/417/EEC O.J. N° L206, 30 July 1988, p.20.

3 ESPRIT - European Strategic Programme for Research and Development in Information Technology. COM(83)258, COM(84)608, COM(85)616, COM(86)269, COM(88)279.

4 ERASMUS - European Community Action Scheme for the Mobility of University Students. Council Decision 87/327/EEC, OJ No. L 166, 25.6.1987, p. 20/24.

5 EUROTECNET - Community wide network of demonstration projects in the field of New Information Technologies and Vocational Training. COM (85) 167 Final.

on 22 May 1989[6] to promote the quantity and quality of training in foreign languages through complementary actions at Community and Member State level.

59 During 1989 a joint study was undertaken in conjunction with the SPRINT programme to research the role and, in particular, the training needs of Industrial Liaison Officers (ILOs). The outcome of this study assisted in the identification of targeted training responses appropriate to the needs of staff specifically concerned with the promotion of joint university-enterprise collaboration across a range of activities, including the identification and meeting of advanced technology training needs through transnational cooperative projects which is one of the primary aims of the COMETT programme.

V. Conclusions on the Development of COMETT and Outlook on COMETT II

60 An external evaluation of COMETT I was commissioned in 1988. After careful consideration of the many high-quality proposals received, the Commission selected a team from Coopers & Lybrand (Belgium and United Kingdom) in cooperation with the Science Policy Research Unit of the University of Sussex (UK). The evaluation was launched at the beginning of December 1988 and a final report was received at the end of April 1989. The terms of reference for the evaluation were:

- an examination of the implementation of COMETT I, including the manner of launching COMETT I and of generating, appraising and monitoring projects;
- an assessment of the development of the COMETT I projects selected in 1987;
- an assessment of the initial impact of COMETT I.

This external evaluation included a postal questionnaire to all 1987 projects supplemented by a number of in-depth case studies. The study also included unsuccessful candidates as well as an assessment of why potential applicants have not sought COMETT support. The main conclusion of this report was the following:

"COMETT has had a powerful impact in encouraging transnational cooperation and has exercised considerable influence in alerting the educational sector and, to a lesser extent, industry to the benefits of training in a European Community and cooperative framework."

61 In June 1990 the Commission launched a second Call for Tender for a further external evaluation of the COMETT Programme. This second evaluation exercise is to examine the performance of COMETT, including the final phase of COMETT I, with reference to the formal programme objectives, focusing especially on such issues as COMETT's support for university-industry cooperation within the context of regional development of the Community through the creation of university-enterprise networks on one hand and on the other hand within the sectoral context of industrial development and interaction with Community R&D. This evaluation will be completed by July 1991 and cannot therefore be covered in this report.

62 The Industrial Research and Development Advisory Committee of the Commission (IRDAC) is a consultative group of leading European industrialists established by the Commission to advise on the development and implementation of R&D Programmes in the industrial sector. In the context of the preparation of COMETT II, the Commission thought it appropriate and essential to secure input and feedback from the industrial world. This coincided with a growing interest of IRDAC in the COMETT Programme. Following the organization on 7-8 September 1987 of an IRDAC Round Table on COMETT, a specific IRDAC Working Party was established regarding COMETT. The resulting IRDAC Opinion on COMETT, published in

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[6] LINGUA - Community action pogramme to promote foreign language competence in the European Community. Council decision 89/489/EEC, O.J. N° L239/24, 28 July 1989.

1988, gave strong support for the cooperative actions promoted by COMETT and made several far-reaching recommendations towards increasing industrial involvement in COMETT. IRDAC was subsequently to build upon its examination of COMETT by establishing in 1989 a further Working Party on Education and Training. Its terms of reference included several matters of direct pertinence for COMETT, particularly the question of skills shortages and of the training requirements of the Community R&D Programmes.

63 The evaluation of COMETT undertaken by Coopers & Lybrand was not able to identify, nor quantify the longer term impact of the programme. At that time it was too early to do so. The evaluation of the entire phase of COMETT I will only be possible after finalization of the second evaluation of COMETT referred to above, which will only be available in July 1991. The conclusions of this first evaluation are nevertheless important when examining the outlook towards COMETT II, particularly the final observations of the evaluation where it is stated:

> *"...Clearly, there is an issue to be resolved where there are scarce training resources relative to the potential demand for them. The market is the mechanism normally used to resolve this kind of issue. But training is an activity where there are many market imperfections. Moreover, boundaries between Member States, between disciplines, and between education and industry present barriers to the optimal allocation and use of training resources at the Community level.*
> *The COMETT programme was designed to break down these barriers but not in a way which imposed strategic priorities - these would emerge from the interactions, incentives and inclinations present amongst the training community, both on the supply and demand side. We agree with this. We do not think that a pro-active approach, in the sense of setting selective, strategic priorities, would have been appropriate in this initial phase of the programme.*
> *So, in our view, COMETT's first phase was justifiably experimental. A wide range of objectives was probably appropriate. But, the evidence from this evaluation is that perhaps the programme was too diverse for effective promotion and implementation and that the next stages need to be more streamlined. The programme now needs a clearer and simpler image of its purposes and objectives, particularly in order to encourage closer participation by industry."*

The IRDAC Opinion on the development of COMETT also pleaded for a more industry-pulled approach:

> *"To ensure a better focusing on industry's real training needs, the European industrial world should be more actively involved in the organization and implementation of the COMETT programme."*

64 This overall analysis has been complemented by internal monitoring results. The response to the issues revealed are given under COMETT II in the following areas:

64.1 Putting the industry input on a more secure footing

From the beginning on it was always easier for COMETT to secure the commitment of universities as against enterprises. The analyses made confirmed these difficulties, even though it is important to note that this is not a problem which is specific only to COMETT. At all levels of training and in all countries, it is an uphill struggle to convince industry to make sufficient investment in its principal resource, in human resources.

In several cases in COMETT I, given that it was an experimental programme, the Commission invested in projects which were more "university-pushed" than "industry-pulled". In doing so, there was a risk factor which was justified by the expectation that the university-enterprise engagement would develop into a proper marriage in the fullness of time. Project monitoring

demonstrated that there was probably no point in making the Community investment unless evidence of industry commitment was clear. COMETT therefore had to strengthen its demands on applicants and promoters in this respect.

A further important factor was to ensure sufficient levels of funding in order to justify industrial commitment. The higher funding levels permitted in COMETT II went some way towards meeting this requirement.

64.2 Identification of training needs in technology

The other important area for investment concerns the mechanisms for analyzing training needs. Particularly in regard to the UETP consortia, where their terms of reference in COMETT II have been reinforced in relation to training needs analysis, the Commission has given greater attention to questions such as:

- being more demanding in requiring projects, especially the larger ones, to base their programme on well organized needs analysis with strong industry input to that analysis

- raising the level of technical competence in relation to the methodology involved. How is effective analysis arranged? How can the analysis keep pace with the rate of change so as to avoid the massive errors which manpower-based approaches have caused in the past? Do industries understand their responsibilities in that area?

There is also a matter for the authorities in the Member States who have the difficult task of allocating ministerial responsibilities for a programme as wide-ranging as COMETT. In COMETT I the principal responsibility has lain with education ministries and COMETT has been effective in securing solid foundations on the education side. However, COMETT requires a demanding interdepartmental effort at both Community and Member State levels if the programme is to have a full impact and if it is to achieve results which are complementary with policy initiatives at Member State level.

64.3 A clearer image and rationale for COMETT II

There has been great pressure for a COMETT II which is more clearly presented and more transparent in regard to its objectives and priorities. The COMETT I programme was accused of being too complex and too diverse. The Commission's own analysis is rather that the real strength and success of COMETT I was its flexibility and adaptability, and it would be wrong to go too far in another direction too fast.
COMETT is about changing attitudes to higher education and in higher education and about creating lasting change in behaviour. For that purpose, there is a need in the next stages to convince on the micro level, and the best way to do that is through examples of sound training that has produced results. Attention will be given to picking examples of mainly the winners - but also some losers - from which much can be learned which will stimulate further efforts. The new structure of COMETT II, where the Commission is channelling higher levels of funding to pilot projects, is an important response to this need.

64.4 COMETT's relationship with other initiatives

Amongst the priorities which must be examined over the next period, at least three are of crucial importance:

- Reaching the SMEs, particularly in a regional context, where the new arrangements for the structural funds, coupled with the complementary Euro-Info-Centres, offer great scope for complementary action.
- Focusing on key industrial sectors undergoing technological change. Here a broad

approach is necessary which addresses the application of technology across all types of industry, in particular some of our older and more traditional industries around which economic re-generation will centre.

Finding common commitment and interest with Member State initiatives. COMETT will certainly drive forward with greater purpose if the Community's effort goes hand in hand with what is being planned at Member State level. The Member States' interest may be because of a closely linked R&D programme, because of a particular focus of regional policy, or because of a strategic choice of an industry sector for future development.

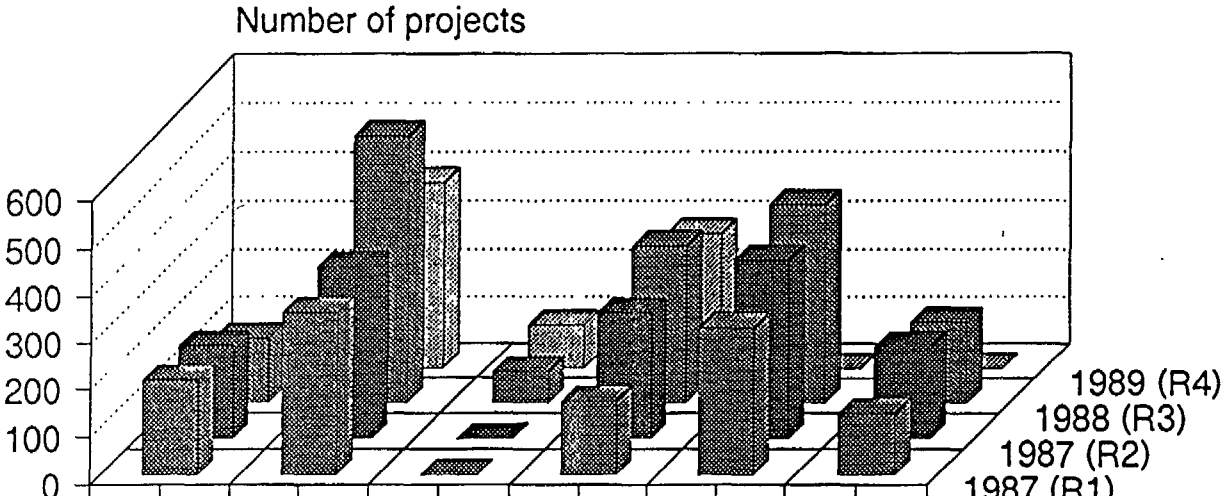
65 Overall, it is difficult to summarise the results of a programme as ambitious as COMETT over a relatively short timespan, especially since the programme is at this time fully operational in a second and more substantial phase. COMETT I was an important new departure for the Commission, being the first education and training programme of any significant scale. This meant that the new programme had to respond to a wide range of expectations, especially given that its scope went far beyond the education and training sector as such and also concerned an area of activity, university-industry cooperation, which was unevenly developed across the Community as a whole. In those circumstances, as recognised by the external evaluation, the optimum approach was to remain flexible and experimental and to use the scarce funds as widely as possible. COMETT I has therefore provided well-prepared foundations upon which further building is occurring in COMETT II. Those foundations are serving not only needs at Member State level, but also Community development needs in so far as human resource development is increasingly an important feature of all Community efforts. COMETT is like the technology itself: an integrating force which challenges existing forms of cooperation and organisation but which offers outstanding opportunities for ever higher levels of performance.

ANNEX 1

Statistical Overview

Projects submitted in COMETT I

Distribution by Strand and Application Round



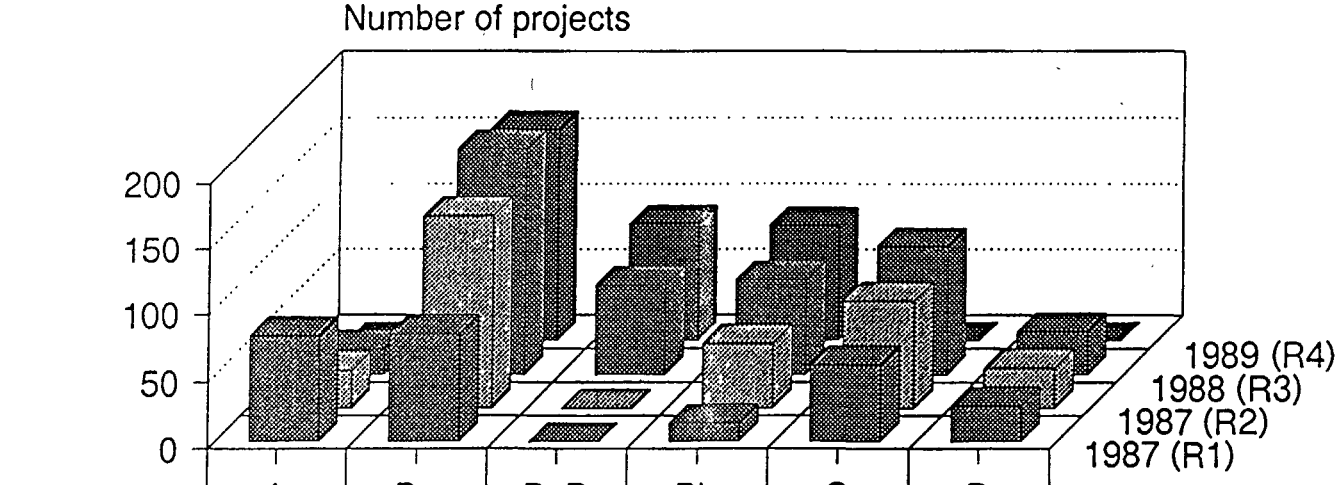
	A	Ba	BaP	Bb	C	D
1989 (R4)	0	391	93	286	0	0
1988 (R3)	141	561	68	335	420	174
1987 (R2)	199	367	0	269	381	197
1987 (R1)	199	345	0	153	312	128

Strands

COMETT Technical Assistance Office - T1

COMETT

Projects accepted in COMETT I
Distribution by Strand and Application Round

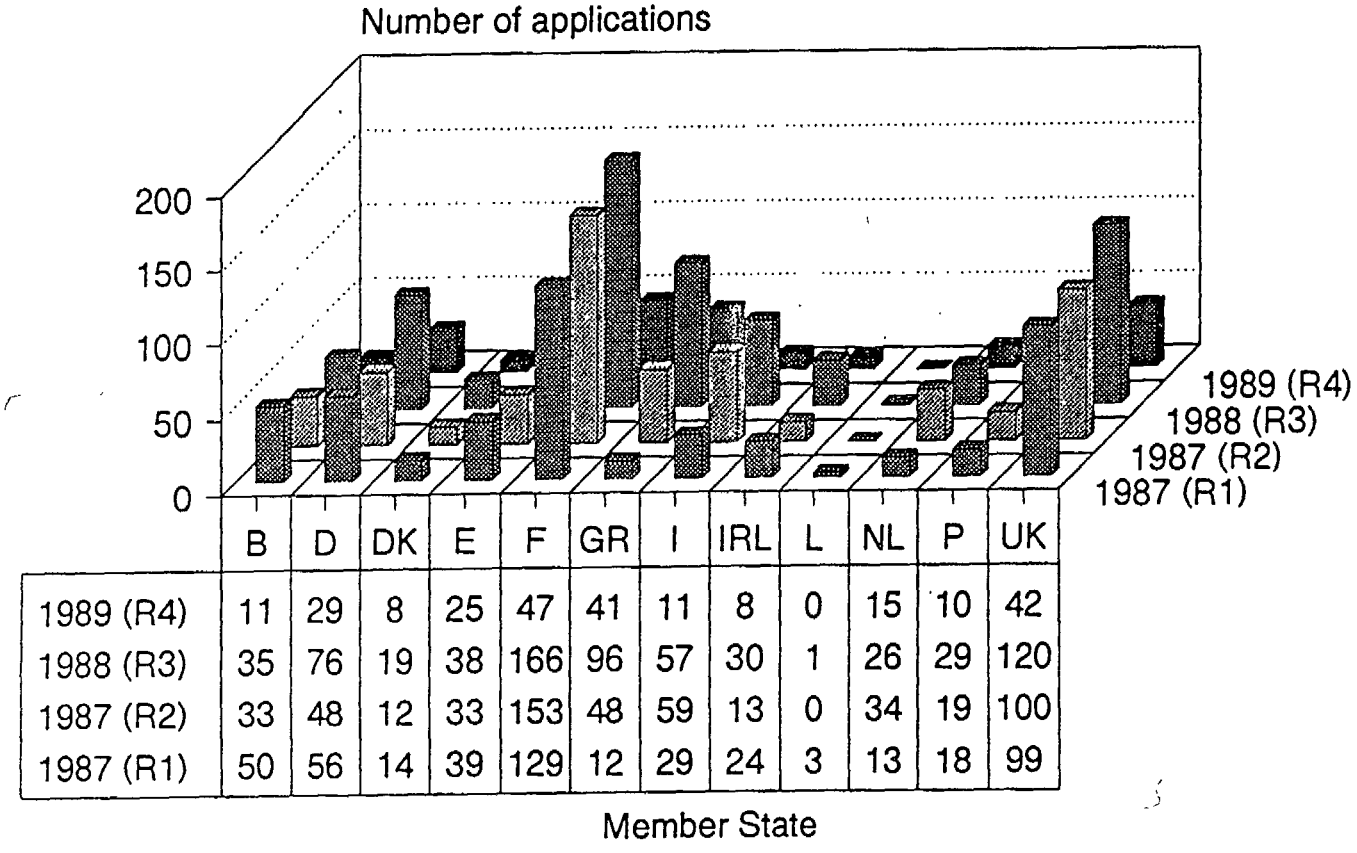


	A	Ba	BaP	Bb	C	D
1989 (R4)	0	161	89	88	0	0
1988 (R3)	19	171	67	71	97	32
1987 (R2)	28	145	0	48	80	30
1987 (R1)	79	80	0	14	57	27

Strands

Applications in COMETT I

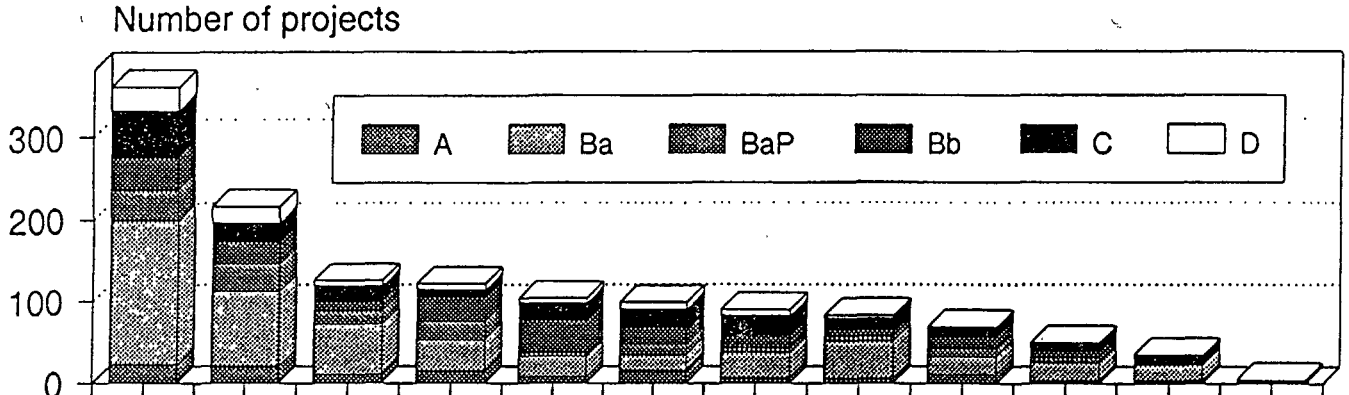
Distribution by Round and applicant Member State



	B	D	DK	E	F	GR	I	IRL	L	NL	P	UK
1989 (R4)	11	29	8	25	47	41	11	8	0	15	10	42
1988 (R3)	35	76	19	38	166	96	57	30	1	26	29	120
1987 (R2)	33	48	12	33	153	48	59	13	0	34	19	100
1987 (R1)	50	56	14	39	129	12	29	24	3	13	18	99

Accepted projects in COMETT I

Distribution by Strand and applicant Member State



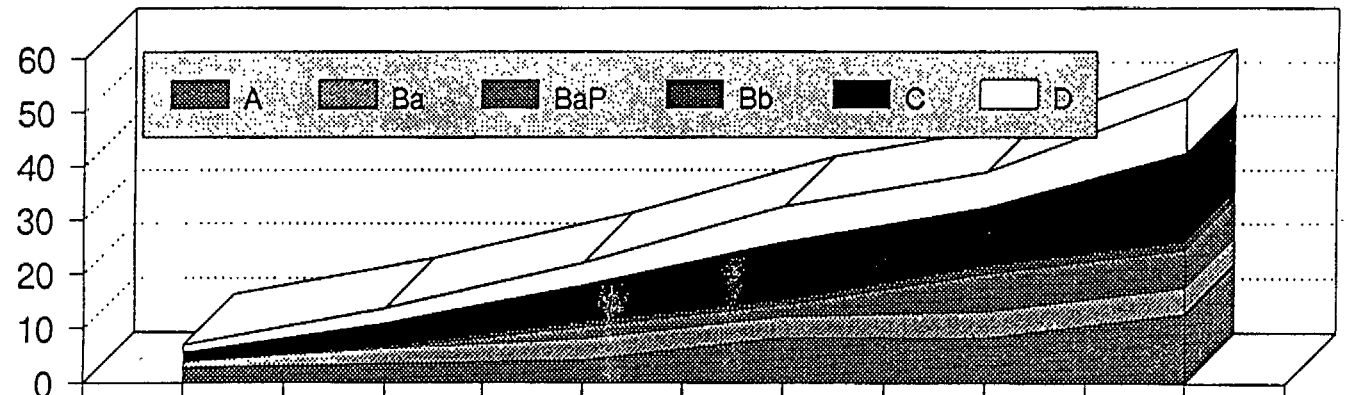
	F	UK	D	E	GR	I	B	NL	P	IRL	DK	L
D	27	19	6	7	5	8	7	3	2	2	2	0
C	57	25	20	10	22	24	25	16	10	7	7	4
Bb	39	26	12	30	40	20	15	7	15	10	2	0
BaP	37	34	16	22	4	13	6	6	10	6	2	0
Ba	176	91	61	38	25	18	30	45	21	22	18	0
A	23	21	11	15	8	16	7	6	11	3	4	1

Member State

COMETT

Amounts allocated in COMETT I
Distribution by Strand

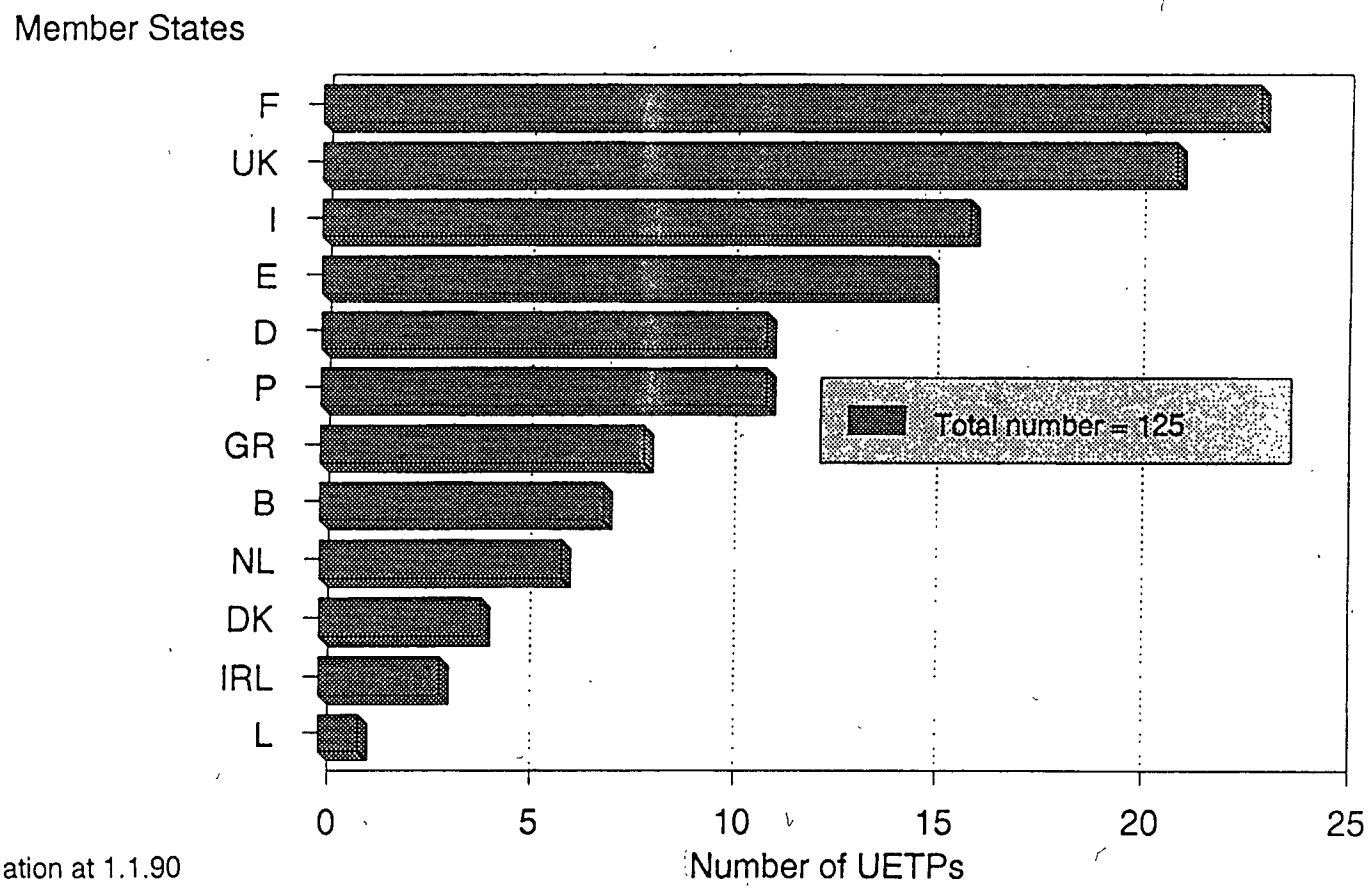
Total amount in Million ecu



	1987 (R1)	1987 (R2)	1988 (R3)	1988 (Ren)	1989 (R4)	1989 (Ren)
D	1.295	1.31	1.38	2.485	0	3.523
C	1.835	2.602	2.584	3.907	0	5.774
Bb	0.102	0.337	0.466	0	0.602	0
BaP	0	0	2.063	0	4.835	0
Ba	0.937	1.755	1.211	0	0.931	0
A	2.783	0.725	0.665	4.06	0	4.457

Rounds

Distribution of UETPs in COMETT I
by Member State

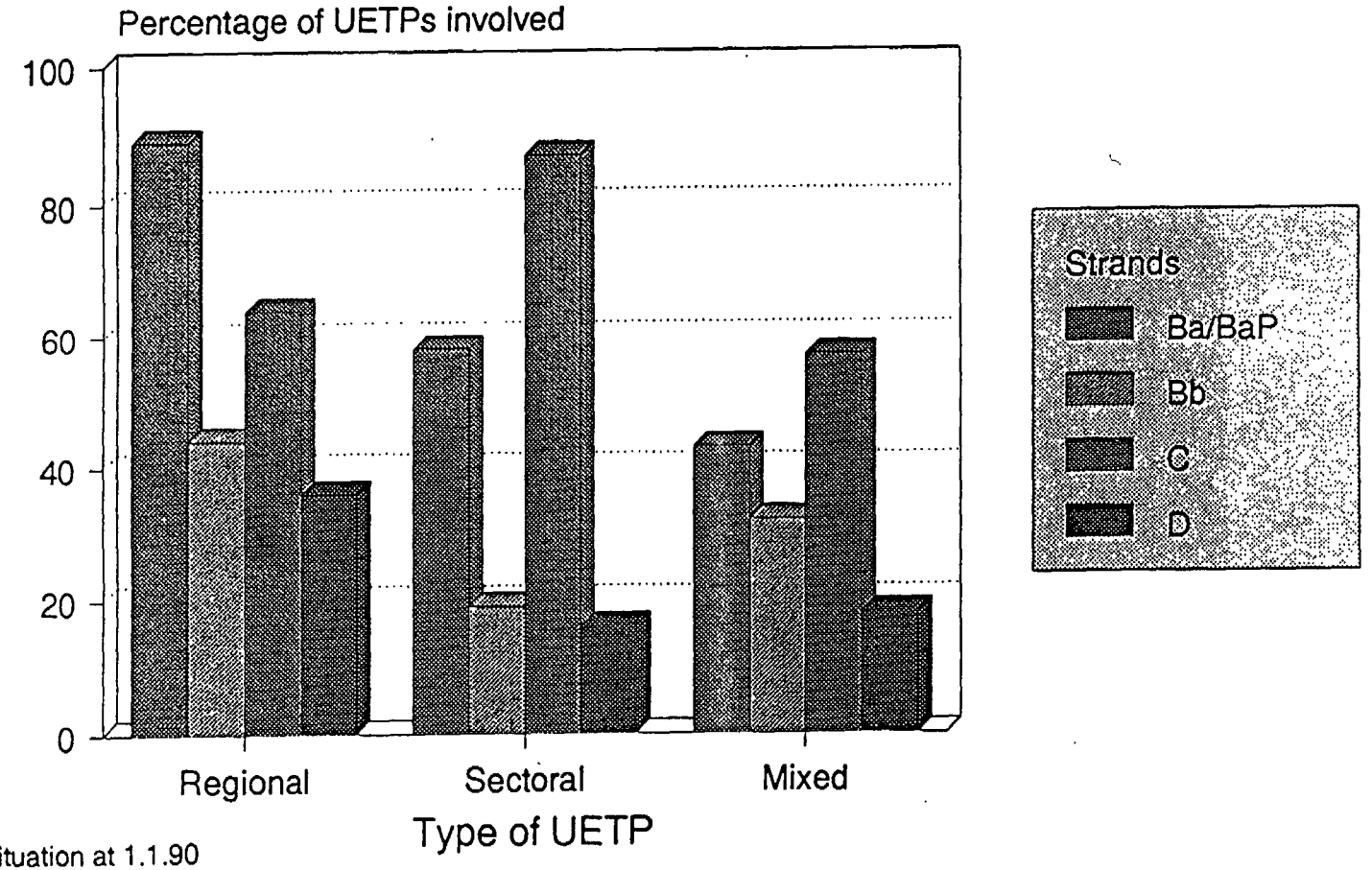


Situation at 1.1.90

COMETT Technical Assistance Office - T6

COMETT

Involvement of UETPs
in other COMETT Strands during COMETT I

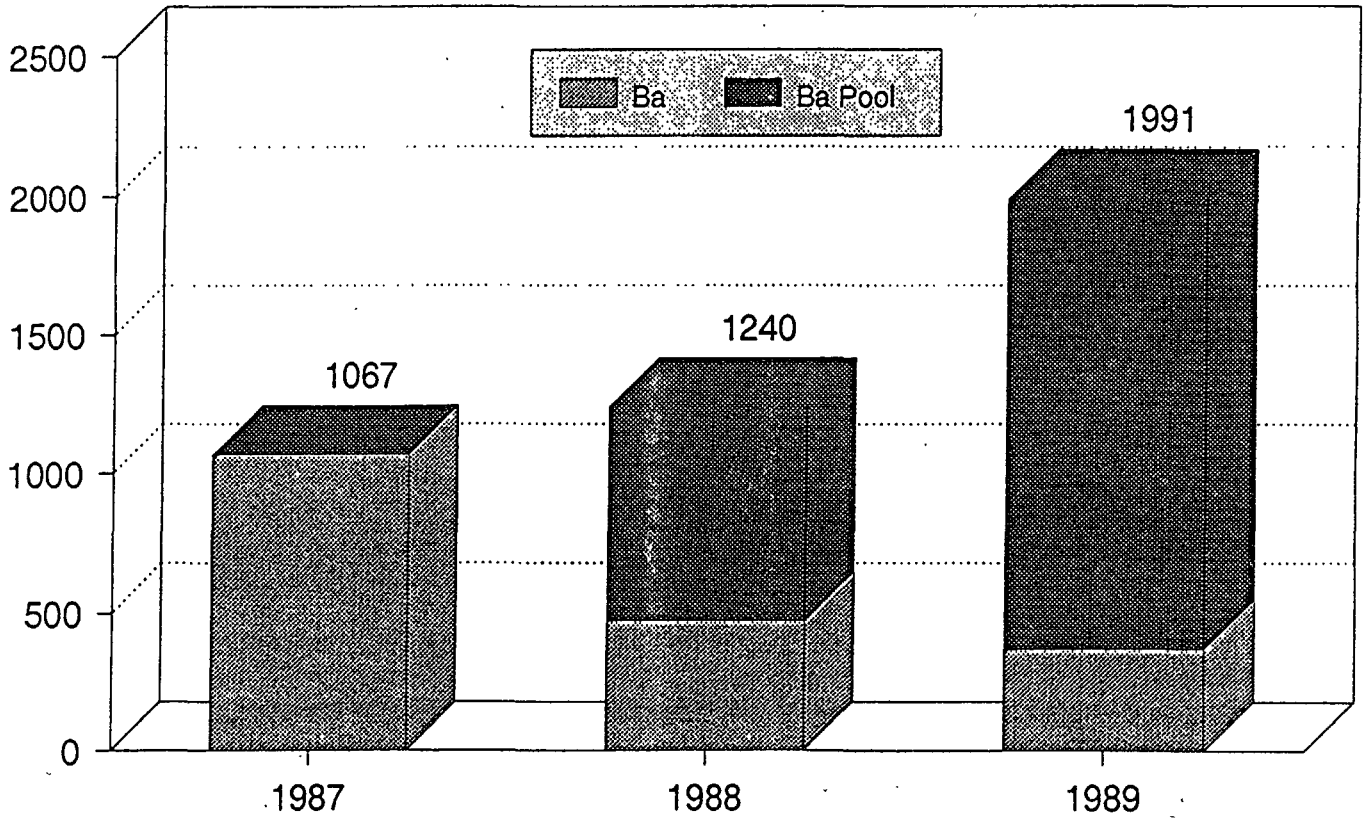


Situation at 1.1.90

COMETT Technical Assistance Office - T7

COMETT

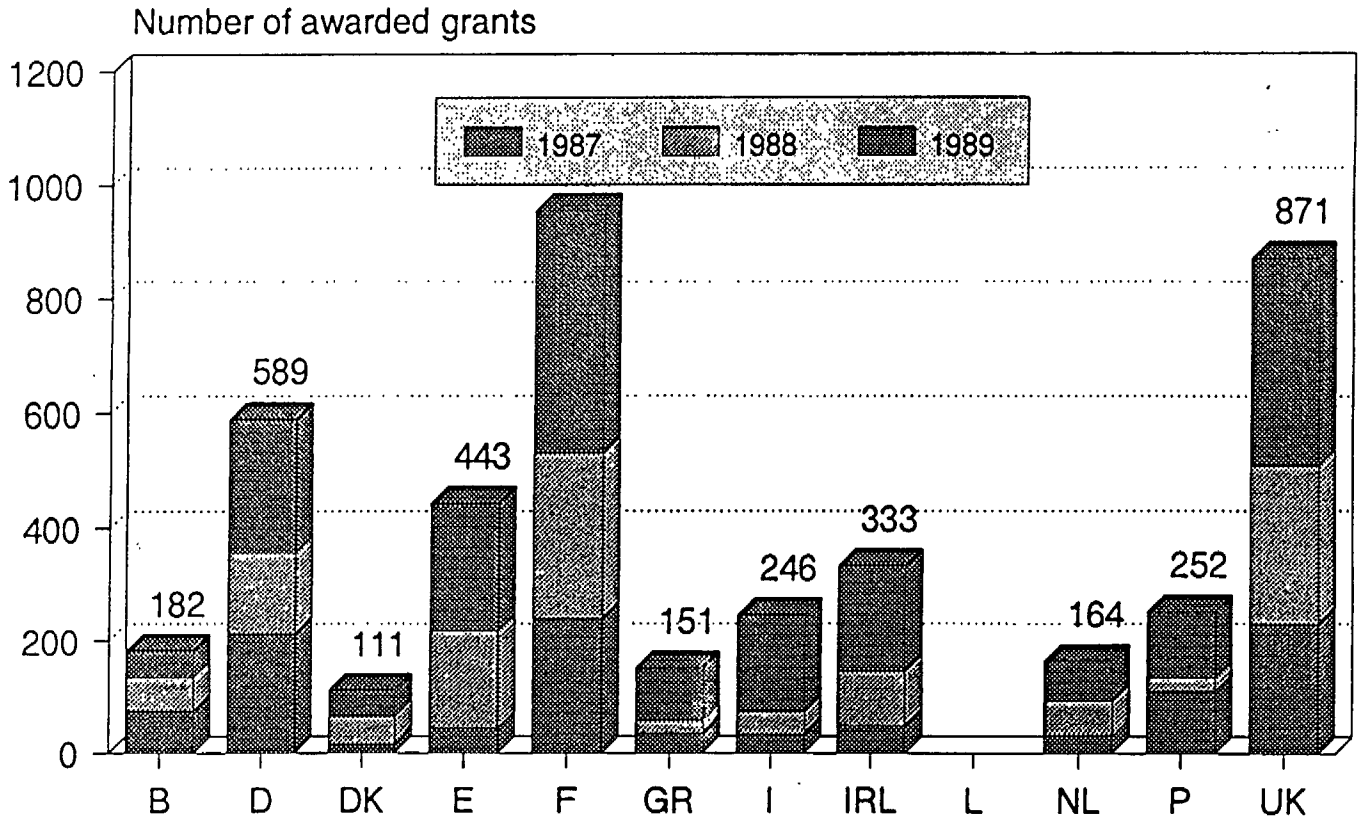
Number of students grants in COMETT I
Ba and BaP projects



Based on the decision list
COMETT Technical Assistance Office - T8

COMETT

Distribution of Ba projects in COMETT I
by Member State and year
(Ba + BaP projects)



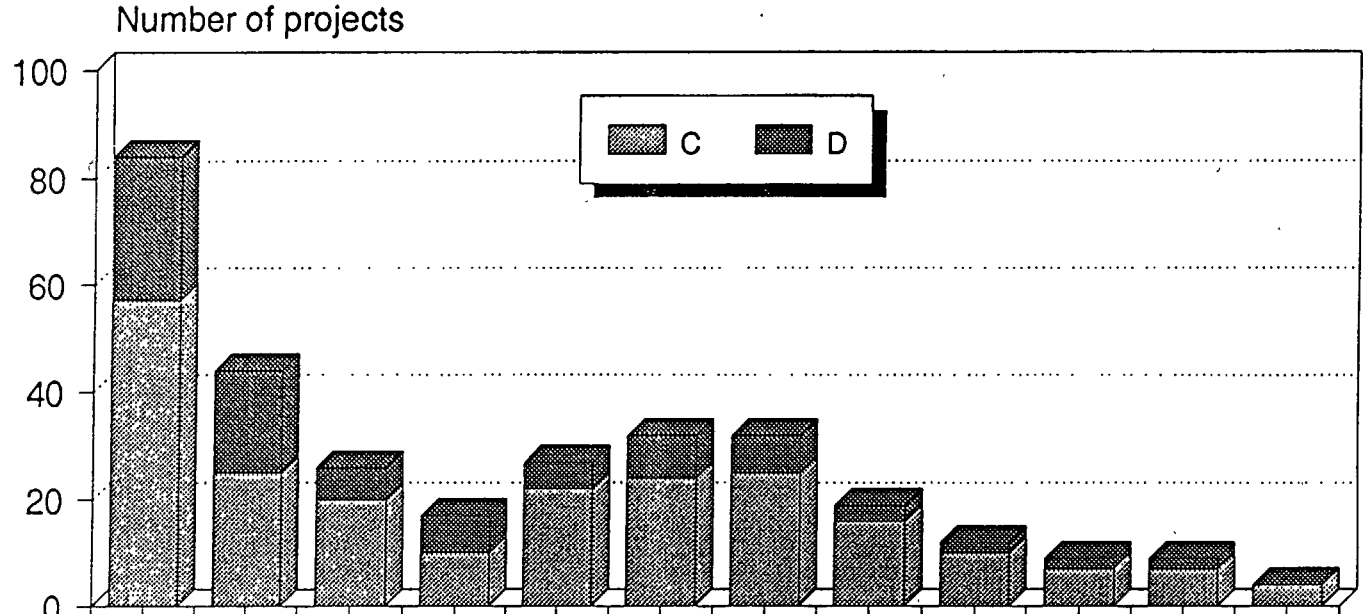
COMETT Technical Assistance Office - T9

COMETT

Projects accepted in COMETT I

Strands C and D

Distribution by applicant Member State



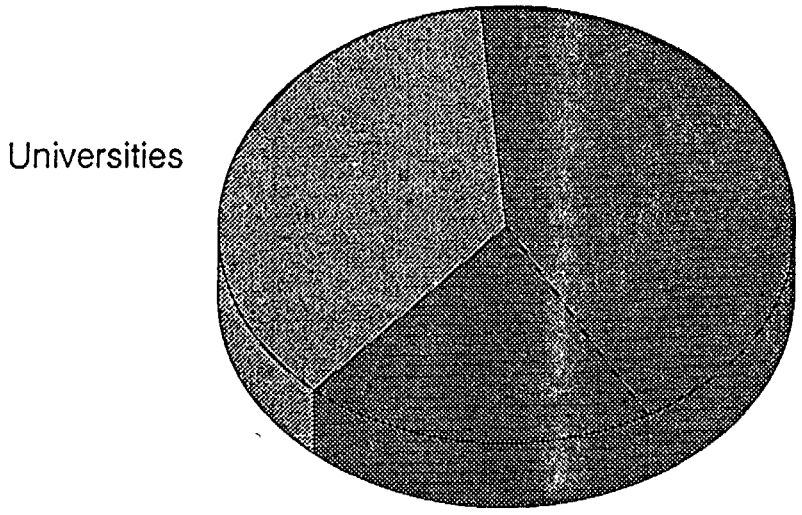
	F	UK	D	E	GR	I	B	NL	P	IRL	DK	L
D	27	19	6	7	5	8	7	3	2	2	2	0
C	57	25	20	10	22	24	25	16	10	7	7	4

Member State

COMETT Technical Assistance Office - T10

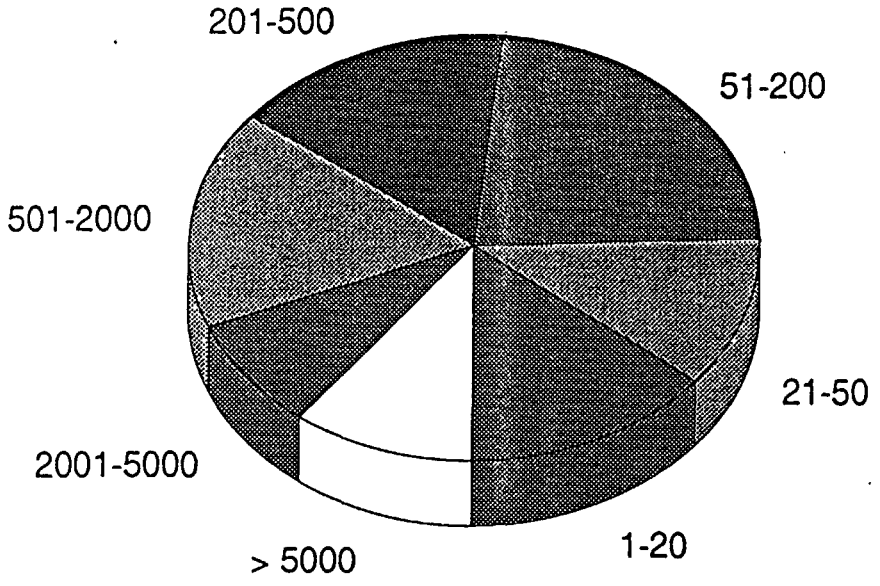
COMETT

Distribution of projects partners
by type of organization in COMETT I



Relative distribution of organizations
involved in accepted projects

Size of Enterprises
in accepted projects in COMETT I



COMETT

ANNEX 2

COMETT Committee and COMETT Information Centres

COMETT COMMITTEE

Members (1989)

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Committee Meetings during COMETT I

1.	11-12 November	1986 (formal)
2.	26-27 March	1987 (informal)
3.	6- 7 July	1987 (formal)
4.	11-12 November	1987 (formal)
5.	14-15 April	1988 (formal)
6.	14-15 July	1988 (formal)
7.	26-27 January	1989 (formal)
8.	9-11 April	1989 (informal)
9.	12 May	1989 (formal)
10.	10-13 June	1989 (formal)
11.	29-30 November	1989 (informal)

INFORMATION CENTRES (EC)
April 1991

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ANNEX 3

COMETT I Documents (1986-1989)

COMETT - Guides for Applicants 1986/87, 1988, 1989 - November 1986/1987/1988 (9 languages)

The Guides for Applicants contain the essential information about the COMETT Programme, its background and objectives as well as its operational components.

Directory of Projects (Draft) - October 1987 (EN-FR)

This Directory includes a collection of summaries of all projects supported under the first Call for Proposals 1987 with a reference to the name and address of the coordinator responsible for the project as well as an identification of the fields covered.

Directory of Projects (final) (1/1987) - December 1987 (EN-FR)

This Directory includes a collection of summaries of all projects supported under the first Call for Proposals 1987 with a reference to the name and address of the coordinator responsible for the project as well as an identification of the fields covered.

Directory of Projects (2/1987) - April 1988 (EN-FR)

This Directory includes a collection of summaries of all projects supported under the second Call for Proposals 1987 with a reference to the name and address of the coordinator responsible for the project as well as an identification of the fields covered.

Directory of Projects (3/1988) - December 1988 (EN-FR)

The Directory includes a collection of summaries of all the projects supported under the third Call for Proposals 1988, with a reference to the name and address of the coordinator responsible for the project, as well as an identification of the fields covered.

Directory of Projects (4/1989) - December 1989 (EN-FR)

The Directory includes a collection of summaries of all the projects supported under the fourth Call for Proposals 1989, with a reference to the name and address of the coordinator responsible for the project, as well as an identification of the fields covered.

Development of COMETT - Report on projects accepted in 1987 - March 1989 (EN-FR)

This document is a mid-term monitoring report on the execution of the first phase of the COMETT programme. It is based primarily on the final reports submitted by the projects supported under COMETT during 1987/88. It concerns essentially Strands A and C of the programme, Strand B being covered more thoroughly in a supplementary document (see Strand B report). There is a specific section for each Member State.

Development of COMETT - Strand B Report - October 1989 (EN-FR)

This analysis concerns the projects carried out within Strand B during 1987/88 and is based on the final reports from those projects, which formed part of the first two application rounds in 1987. It contains, in particular, quantitative results as well as some observations on the degree to which the Strand-specific COMETT criteria have been met.

Development of COMETT - Report on projects accepted in 1988 - July 1990 (EN-FR)

This report follows the first "Development of COMETT" issued in March 1989 and describes and analyses the progress during 1988/89 of the projects accepted under the COMETT I in 1988. It is based on the reports submitted by contractors, supplemented in certain places by other information gathered as part of the internal monitoring process.

Report of Activities 1987 - February 1988 (9 languages) COM (88) 36 final
Report of Activities 1988 - April 1989 (9 languages) COM (89) 171 final
Report of Activities 1989 - April 1990 (9 languages) COM (90) 119 final

These are the Annual Reports referred to in Article 5 of the Decision of the Council establishing the COMETT programme. The purpose is to formally record an account of the progress made in the implementation of the COMETT in the years in question.

Catalogue of COMETT outputs. First version - June 1989 (EN)

This document provides information about the outputs that have already been produced by COMETT projects, divided into the five following sections: Training Materials, Training Courses, Studies, Databases and Newsletters, with the intention to use this prototype to generate feedback and inform actual users about their particular requirements.

Catalogue of COMETT outputs. Second version - September 1990 (EN)

This catalogue replaces the first edition of the "Catalogue of COMETT Outputs" which appeared in August 1989. It provides information about the outputs of all COMETT projects supported under all Strands of the first three Application Rounds of COMETT I and is based exclusively on data provided by project promoters in response to an annual project evaluation survey.

Like the first version it is divided into five sections: Training Materials, Training Courses, Studies, Databases and Newsletters.

The UETPs in COMETT I - Facts and Figures - October 1989 (EN-FR)

This document gives a global view on UETPs, their organisational issues and their activities, with supportive data and a listing of the regional, sectoral and mixed UETPs.

COMETT Background Document - December 1989 (9 languages)

This document gives an overview of background to the creation of COMETT and the main achievements of COMETT I, the evaluation of the programme and the strategic objective set for COMETT II.

Statistical Analysis of COMETT Projects. First version - November 1988 (EN-FR)

The data presented in this document covers the different COMETT Strands in the years 1987/88.

COMETT Project Compendium - December 1989 (EN-FR)

This compendium includes basic information on all COMETT projects accepted under all Strands and application rounds of COMETT. Projects are listed with the project title, a short indication of the nature of the project and the contact person and address.

COMETT Bulletin:	**No 1 -**	February 1988	**No 2 -**	June 1988
	No 3 -	October 1988	**No 4 -**	March 1989
	No 5 -	July 1989	**No 6 -**	November 1989

The COMETT Bulletin is a 24 page Bulletin which appears in English and French. It contains a range of articles relevant to COMETT. It is used as an important information channel towards COMETT projects and all organisations interested in the programme.

Video on the COMETT Programme - 1988

A video on the COMETT programme has been produced by the Commission (PAL-SECAM). This video shows the importance of new technologies and their impact on several industrial sectors. These new technologies need specialized skills and the actors in this field are university and industry. The importance of the COMETT programme facing these problems on an international scale becomes explicit.

Entreprise en Alternance - Les stages ou les diplômes universitaires dans le cadre des formations technologiques - July 1987 (FR)

Three case studies undertaken in France, Germany and the United Kingdom analyze student placements in industry with a follow up by higher education institutions. This study has been undertaken by the European Institute for Education and Social Policy for the Commission of the European Communities.

Les obstacles juridiques et réglementaires à la coopération industrie - université dans le domaine de la formation aux nouvelles technologies - June 1987 (FR)

This study concerns the legal obstacles to the cooperation between higher education and industry in the field of training in new technologies based on Strand B (student placements) of the COMETT programme. The study has been undertaken by J. M. Didier and Associates S.C. for the Commission of the European Communities.

The training needs of staff in the Community's higher education sector engaged in cooperation with industry - May 1987 (EN)

This study considers the development of cooperation between the Higher Education sector and Industry in the European Community. It surveys the work of the present staff and structures in the Higher Education Sector engaged in cooperation with Industry as well as it considers the future developments of this cooperation. The final report has been prepared by the European Research Associates for the Commission of the European Communities.

Evaluation of the COMETT Programme - April 1989 (EN-FR-DE)

This document represents an evaluation of the COMETT Programme and is based on the initial phase of COMETT I, taking into account the first and second Call for Applications 1987. The evaluation has been undertaken for the Commission by Coopers & Lybrand, C&L Belmont, in association with the Science Policy Research Unit of the University of Sussex. The executive summary is in the nine official languages.

IRDAC Opinion on the Development of COMETT - June 1988 (EN-FR)

This document contains the results of the IRDAC Working Party 7 held in 1987 and 1988 which has been established in the

context of the awareness that it would be appropriate and essential to ensure input and feedback from the industrial world in regard to the COMETT Programme.

Council Decision - COMETT I (9 languages)

Council Decision of 24.06.1986 adopting the programme on cooperation between universities and enterprises regarding training in the field of technology.

Council Decision - COMETT II (9 languages)

Council Decision of 16 December 1988 adopting the second phase of the programme on cooperation between universities and industry regarding training in the field of technology (COMETT II) (1990 to 1994).