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COMETT PROGRAMME

REPORT OF 1992 ACTIVITIES

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EXECUTIVE SUMMARY

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).

The second stage of the programme - COMETT II - for the period 1990-1994, was adopted by the Council in December 1988 (Decision 89/27/EEC) and came into operation on 1 January 1990. COMETT II aims at reinforcing training in technology (particularly advanced technology), the development of highly skilled human resources and the competitiveness of European industry. COMETT II is not simply an extension of COMETT I but a development, a deepening and broadening of the scheme. The Decision re-emphasises COMETT's role as a Community Programme for advanced training for technology and its applications but places increased stress on changing skill requirements and regional needs.

With the beginning of this second phase and in accordance with the Council Decision of 22 May 1989, universities and enterprises of the Member States of EFTA (European Free Trade Association) can take part in the COMETT Programme.

The estimated budget for COMETT II for the period 1990-1994 is 200 million ecus; (the contribution of the EFTA countries counting for 30 million ecus).

1992 marked the half-way stage of the COMETT II Programme. In this year the Call for Applications was open for all the Strands (except Strand Bb). This was the second and last year for a full Call for Applications.

Of the projects submitted, 555 were accepted (that is, two out of every three proposals received). From these new university enterprise training partnerships (UETPs) were created, bringing the total up to 125 regional UETPs (confined to a particular geographical region) and 80 sectoral UETPs (concerned with a specific technological or industrial sector). By 1992 the COMETT university-enterprise network consisted of 205 structures. The 172 accepted projects for student exchanges financed more than 6,900 student placements; 124 transnational secondments of university and industry personnel were organised in this year. As far as training courses are concerned, 154 intense training projects were accepted which mounted 1300 training sessions. Some 113 joint training projects were finally accepted for support. In the year under report, more than 1,000 courses were supported by COMETT, with more than 20,000 persons receiving training in advanced technology. More than 2,000 training materials were being developed in 1992.

The projects accepted in 1992 involve more than 5,000 European enterprises, some 1,700 higher education establishments and about 2,000 other organisations. 80% of 1992 projects involve at least one SME. EFTA participation more than doubled (18% of all projects in 1992, as opposed to 7% in 1990).

Since in 1992 COMETT II was half-way through its Programme, the Commission carried out an internal evaluation covering the period 1990-1992. The Interim Evaluation Report, entitled *Transnational training for technology in Europe: the COMETT experience*, records encouraging results, both in terms of the annual Call for Applications and in terms of the new projects selected for support. The Interim Report estimates that for the entire duration of the Programme, COMETT will be funding close to 30,000 student exchanges together with approximately 7,000 course sessions. By 1994 close to 3,000 training materials will have been supported by the Programme. This means that by the end of the second phase of COMETT II no less than half a million people throughout Europe will have directly benefitted from the Programme.

In the year under review, COMETT participated for the first time in the Hannover Fair which took place between April 1 - 8, 1992. Eight COMETT projects in the energy and environment sectors

exhibited their outputs at the COMETT stand. With participants coming from eight European countries, the exhibition reflected the transeuropean character of the COMETT Programme.

Of the several COMETT events which took place during 1992, the conference held in Glasgow, 26 - 27 November 1992 for COMETT's 28 pilot projects needs to be mentioned. The conference focused on issues crucial to the development of these large-scale transeuropean COMETT projects. Glasgow confirmed COMETT's increasingly important role in establishing a wide range of university-enterprise dialogue and cooperation throughout the Community.

The third external evaluation of the COMETT Programme was launched by the Commission in May 1992. Following the Tender, an independent consultancy firm was appointed to carry out the evaluation between October 1992 and April 1993. This evaluation is only the first step of a "three-pronged" approach of evaluating the COMETT programme. Indeed, evaluations have been launched by all countries participating in COMETT. Furthermore, the conclusions of the external evaluation will be reviewed by a panel of independent experts appointed by the Commission. This review panel will participate in the evaluation exercise in order to develop, in the form of "scenarios", recommendations regarding future Community actions in the areas currently covered by COMETT.

External evaluations of the programme confirm the contribution COMETT is now making to the transfer of new technological knowledge from universities to industry through a well developed network of training consortia. As such it provides a basic support to many Community objectives such as industrial adaptation, regional development and innovation among SMEs.

INTRODUCTION

1.1 What is COMETT ?

COMETT is a Community programme of university-industry cooperation. It is by no means the only existing scheme, but it is perhaps the only one that deals with this issue on a *transnational* basis. In order to strengthen the relations between higher education and economic life, COMETT supports a wide range of university-industry dialogue and co-operation, all of which is related to technological change. These different activities of cooperation are deeply complementary constituting a common pattern of institutional cooperation for technological development. One of COMETT's main objectives is to provide opportunities for faster and more effective transfer of technology.

'COMETT' is the acronym for COMmunity programme for Education and Training in Technology. The transnational COMETT projects fulfil the following criteria: they are all concerned with technology (in particular, advanced technology), and they involve at least one university and one enterprise from two different Member States or EFTA countries.

The first phase of the Programme was established by the Council Decision 86/365/EEC of 24 July 1986. Following a preparatory year, COMETT I ran for three operational years, from 1987-89. The second stage of COMETT, for the period 1990-94, was adopted by the Council in December 1988 (Decision 89/27/EEC). COMETT II came into operation on 1 January 1990.

With the beginning of this second phase and in accordance with the Council Decision of 22 May 1989, universities and enterprises of the Member States of EFTA (European Free Trade Association of Austria, Finland, Iceland, Norway, Sweden, Switzerland and Liechtenstein) were entitled to take part in the Programme.

In 1992 COMETT II was half way through its second phase and most projects had now reached a stage where they registered good results.

COMETT and Subsidiarity

Discussions on the Maastricht Treaty on the European Union have drawn our attention to three linked issues of greater democratic control: the principle of subsidiarity, and the respect for greater transparency and openness in Community legislation. Recognising the importance of these interrelated issues, COMETT has made them from the beginning part of its strategy. This is first of all apparent in the European network of COMETT UETPs which through regional and sectoral activities promotes cooperation on transeuropean level. The university-enterprise partnerships are through their decentralised and local service in 19 countries of the Community, in a particularly good position to fulfil the principles of subsidiarity and transparency. In addition, there is the 'pool' system which provide a decentralised and local service for the implementation of COMETT exchanges and training activities.

1.2 The Objectives of COMETT

COMETT aims at reinforcing training in technology (particularly advanced technology), the development of highly skilled human resources and the competitiveness of European industry. As such, COMETT represents an important part of the Commission's overall programme in the education and training field. By supporting the development of university-enterprise links on a transnational basis, COMETT assists in the development of systems and mechanisms for identifying and providing solutions for the high skill needs of industry in the field of technology. In doing so, COMETT also

contributes to the development of social and economic cohesion across the Community. This aim, the overall balanced development of the Community, is reinforced by COMETT's assistance in the transfer of technology to the less advanced regions.

COMETT in 1992

- In this year 555 projects were accepted for COMETT funding. From these were 23 new regional UETPs (that is, partnerships confined to a particular geographical area) and 19 sectoral UETPs (that is, partnerships concerned with a specific technological or industrial sector) created, bringing the total up to 205 COMETT UETPs.
- The projects accepted in 1992 involve more than 5,000 European enterprises, some 1,700 higher education establishments and about 2,000 other organisations. 80% of the projects accepted in 1992 involve at least one SME*.
- In 1992 more than 6,900 student placements were funded by COMETT (38% more than in 1991). In this year COMETT accepted 67 Bc projects which organised 124 personnel exchanges. The 154 intense training projects mounted 1300 training sessions.
- In the year under report, EFTA participation more than doubled (18% of all projects in 1992 compared to 7% in 1990).

* In this document an SME is defined as an enterprise with less than 300 employees.

The specific objectives of COMETT II laid down by Article 3 of the Council Decision of 16 December 1988 are :

The contribution of technology training to economic and social development 'to improve the contribution of, in particular, advanced technology training at the various levels concerned and thus the contribution of training to the economic and social development of the Community';

And the second second

Joint university-industry efforts

'to foster the joint development of training programmes and the exchange of experience, and also the optimum use of training resources at Community level, notably through the creation of transnational sectoral and regional networks of, in particular, advanced technology training projects';

Training needs of small and medium-sized firms

'to respond to the specific skill requirements of small and medium sized businesses having regard to specific priority measures';

Equal training opportunities for men and women

'to promote equal opportunities for men and women in initial and continuing training in, in particular, advanced technology;

Promoting the European dimension

'to give a European dimension to cooperation between universities and industry in initial and continuing training relating to technologies and their applications and transfer'.

II. THE COMETT PROGRAMME -CHARACTERISTICS, DEVELOPMENT AND RESULTS IN 1992

2.1 The Operational Components

In order to meet its general objectives, COMETT focuses on four main areas of activity, each of which constitutes a *Strand* within the Programme as a whole. What these actions have in common is that they set out to promote, on a transeuropean basis, training for technology at an advanced level. The other unifying feature is that they will always involve at least *one* university and *one* enterprise.

The COMETT Programme centres on the following areas of activity:

- European network of university-enterprise training partnerships (Strand A)
- Transnational student placements (Strand Ba)
- Transnational advanced student placements (Strand Bb)
- Transnational personnel exchanges (Strand Bc)
- Short training courses (Strand Ca)-
- Joint training projects (Strand Cb)
- Pilot projects (Cc)

2.2 European network of University-Enterprise Training Partnerships (Strand A)

The backbone of the COMETT Programme is the development and reinforcement of university-enterprise training partnerships (UETPs) operating both on a regional and/or on a sectoral basis, to further transnational cooperation. The UETPs provide the infrastructure for the implementation of the COMETT Programme. At the beginning of COMETT II there were 158 UETPs in existence of which 99 were *regional* in that they were confined to a particular geographical area, 49 were *sectoral* in that they were concerned with a specific technological or industrial sector, and 10 were mixed (regional/sectoral) partnerships.

Development and Results 1992

2.2.1 In 1992 the Call for Applications was open for all the Strands (except for Strand Bb). This was the second and last year for a full Call for Applications.

1992 saw the development and implementation of some new measures which further strengthened the existing network of the university-enterprise partnerships. At regional level, priority was given to the new German Länder, Switzerland and Norway (where there were no regional UETPs), also Southern Italy and Southern Spain as well as to certain other regions where coverage is still weak. At sectoral level, priority was given to software technology, chemical processing, telecommunications, applied electronics and electrical power technology.

2.2.2 In total, 114 proposals for new UETPs were submitted in this year, dividing into 40 regional and 74 sectoral UETPs. Significant is that a large number of UETP proposals came from Spain (8), Italy (16), Switzerland (13) and Norway (6) - this was no doubt due to the *Positive Actions* carried out in these countries. Also noteworthy is that 151 of the 863 applications came from EFTA countries (see § 4.3). Compared to 1990, EFTA participation has more than doubled with 18% of all projects in 1992 being from EFTA as compared to 7% in 1990.

Of the projects submitted, 555 were accepted (that is, almost two out of every three proposals received). From these new UETPs were created, bringing the total up to 125

regional UETPs and 80 sectoral UETPs, that is, by the end of 1992 the COMETT university-enterprise network consisted of 205 structures.

The 1992 selection further increased the European dimension of the COMETT network: on average, each Strand A and Cb application involved 18 organisations from 5 different countries.



Figure 1-The geographical coverage of COMETT UETPs in 1992

2.3 Transnational exchanges (Strand B)

2.3.1 The grants for transnational exchanges fall into the following categories:

- Student placements: Grants for students undergoing periods of training (3-12 months) in industry in another Member State or EFTA country as an integrated part of their training at university. (Strand Ba)
 - Exchange of personnel: These grants provide fellowships (2-12 months) for personnel seconded from universities to industry or vice versa in another Member State to bring their skills to the host organisation. (Strand Bc).

Transnational exchanges of students and personnel are a major commitment for the UETPs. The placements of students and personnel have proven to be an efficient way of improving technology transfer and strengthening the university-enterprise network. Comparisons are always illuminating and it is therefore interesting to note that COMETT I supported approximately 4,115 student placements and some 200 transnational secondments of university and industry personnel. Since COMETT 1 the scale of this activity has increased considerably, with the two first years COMETT I exactly doubling the level of activity of the whole of COMETT 1.



Figure 2 Transnational flows of students in 1992

Developments and Results 1992

2.3.2 Under Strand Ba, Student Placements, the Call was limited to UETPs; 70% of which submitted projects in this Strand, representing some 26,000 student placements in total.

In the year under review, COMETT financed 172 student placements schemes which provided grants for 6,900 transnational student exchanges - this represents an increase of 38% as compared to 1991.

- 2.3.3 As far as Advanced Training Placements are concerned (Strand Bb), due to the low success rate in the previous year (in 1990 13 projects were accepted out of 99 applications) there was no Call for Applications in this Strand in 1992. In the year under report, the concentration was on the two other Strands, that is, Strand Ba and Bc.
- 2.3.4 Strand Bc, Exchange of University and Enterprise Personnel: In this Strand COMETT accepted 67 projects with which 124 Personnel Exchanges were organised.
- 2.3.5 1989 witnessed the beginning of the very successful **Pool Schemes** with the COMETT consortia. Under this scheme, the COMETT university-enterprise training partnerships receive from the Commission a 'pool' of student placement grants which can be allocated flexibly over the ensuing academic year to students undertaking a placement in industry in another Member State. Initially designed for student exchanges only, the Pool Scheme was extended in 1991 to include the organisation of courses.

Through the pool procedure, the UETP can and must demonstrate its potential for identifying qualification gaps or industrial training needs; for supporting and advising its partners and for transfer of knowledge and know-how as well as of people.

The great success of the 'Pool Schemes' is reflected in the fact that the majority of COMETT UETPs are participating actively in this scheme. The interest in these schemes is steadily increasing and in 1992 6,900 student placements and 1,300 course sessions were arranged by the Pool Scheme.

2.4 Joint projects for continuing training in technology and for multimedia and/or distance training (Strand C).

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2.4.1 The 1992 Call for Applications concentrated on the following actions:

Crash training courses with a European dimension in technology (particularly advanced technology) designed for the rapid dissemination - by and in universities and by and in industry - of research and development results in the field of new technologies and their applications, as well as for the promotion, particularly for small and medium-sized enterprises, of the transfer of technological innovation to sectors in which it was not previously applied. (Strand Ca)

Devising, developing, and testing at European level joint training projects in technology (particularly advanced technology), initiated jointly by different industries in association with the universities concerned in at least two different Member States in fields relating to the new technologies and their applications. Many of these projects are involved in the development of training materials using new technology such as computer based training, simulators, CD-ROM, interactive videos, etc. (Strand Cb)

Developments and Results in 1992

2.4.2 The COMETT Crash Training Courses are designed for the rapid dissemination of research and development in the field of new technologies. They particularly focus on technology transfer involving SMEs. In the 1992 Call for Application 65% of UETPs submitted Strand Ca applications. The 154 projects accepted under this Strand enabled UETPs to mount almost 1,300 training sessions.

2.4.3 In the end some 113 new Joint Training Courses were accepted.

2.4.4 At the beginning of COMETT II, 28 Pilot Projects had been selected for their exemplary nature and potential impact on technology training in Europe. These large-scale projects show one or more of the following four characteristics: they address skills and qualifications needs in specific technology sectors at European level; they aim at developing close and lasting cooperation between industry and university; they focus on appropriate industrial training programmes for SMEs; finally, they are truly 'transfer projects'; in that they focus on the transfer of qualifications, skills, and methodologies. The Pilot Projects are supported by the Community for a four-year period with the amount of 500,000 ECU each (at least the same amount will be contributed by partners). A list of the Pilot Projects is given in Annex 2.

A special conference for COMETT's 28 Pilot Projects was held in Glasgow, 26-27 November, 1992 (for more details see § 4.4, below).

It is also worth noting here that the Cb and Cc projects accepted in 1990 (182 and 30, respectively), were now in their third operational year and actively developing training materials and courses. While the precise figures will only be available when the final reports will have been written at the completion of these projects, it may be estimated that in 1992 more than 1,000 courses were supported, with more than 20,000 persons receiving training in advanced technology. More than 2,000 training materials were being developed in 1992.

2.5 Added value of COMETT

The COMETT Programme has developed a balanced network of cooperation between universities and industry, providing vital links throughout Europe. Many new cooperation axes are now actively contributing to the economic and social well-being of the Community. Numerous exchanges of students and personnel have been organised between countries that before had never exchanged either students or staff. Without the COMETT support and the creation of the COMETT UETP network these exchanges would never have taken place. Working towards a better understanding of national concerns in student placements and continuing education. COMETT has contributed towards a deeper integration of the European Community.

In certain countries and/or regions COMETT has been catalytic in creating a continuing training market, while in others COMETT has contributed to its enrichment, transparency and improvement of the quality, in particular, of advanced technology courses. Without the COMETT support, many universities would not have been able to invest in Continuing Education Training (CET) programmes.

COMETT projects provide feedback to the initial, local education systems thereby improving the existing curricula. For many universities COMETT has been the first experience with a European programme. In addition, COMETT has contributed to reflections and insights on structural and management issues in these institutions.

COMETT has given special attention to regional development through the creation of a very active university-enterprise training partnership network within the Community, and more recently the EFTA countries. The COMETT programme incorporates an important number of 'transfer' projects which have been specifically designed to transfer knowledge and skills from more to lesser advanced regions. While such projects occur in all 'Strands' of activities and in many sectors, they are of particular significance in the technology and industrial areas of the less developed regions.

2.6 Budget

The overall estimated budget for COMETT II (1990-1994) is 200 million ecus, excluding the contribution of the EFTA countries (30 million ecus). This sum is intended to cover all the actions supported under the four Strands of the Programme.

Noteworthy is that each year, the budget requested by applications is approximately ten times higher than the budget available, clear evidence of industry's interest in training activities.

In 1992 projects accepted were granted a total budget of 36 million ecus. In addition, 19.1 million ecus were allocated to UETPs, joint training projects and pilot projects accepted in 1990.

III. PROGRAMME MANAGEMENT

3.1 Selection 1992

In this year clear priorities were given at regional and sectoral levels (see § 2.1.1, above). The actual selection process corresponded closely to the one adopted in previous years:

• First came the initial assessment of the applications by the Commission with the support of the COMETT Technical Assistance Office. All ineligible applications were removed at this early stage (ineligibility, for example, due to the non-transnational nature of the project or the lack of a university-industry partnership), and the ground was prepared for the later stages of the selection process.

- The criteria used for the selection of projects were those given in the Vademecum and Application Package. In accordance with the fundamental objectives of COMETT, eligible projects have to involve cooperation between universities and enterprises relating to post-secondary level training concerned with technology and its application or areas affected by technological change.
- The next concern was that of the internal coherence with the other Community programmes, both those relating to the Framework Programme of Research and Development as well as those directed towards specific sectors, such as the strategic programme in favour of SMEs. The Community programmes with which COMETT has established close links are DELTA¹, ERASMUS², FORCE³, EUROTECNET⁴, LINGUA⁵, and TEMPUS⁶.
- The projects were then assessed by the COMETT Experts Group, a group of independent experts from universities and industry. The Experts Group met for this purpose on 5-6 March 1992 and 8-11 April 1992 (in Portugal on the occasion of the COMETT conference).
- The proposed draft list of accepted projects was submitted to the COMETT Committee and the COMETT EFTA Joint Committees on 19 May 1992. In this process, 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.
- Taking into account the views expressed by the COMETT Committee and the COMETT EFTA Joint Committees, the Commission decided upon a final list of projects for Community support.

3.2 COMETT Committee and EC-EFTA Joint Committees

- 3.2.1 The development of the COMETT Programme has been conducted throughout in close collaboration with the COMETT Committee. The role of the Committee is to assist the Commission in the implementation of the COMETT Programme. The Committee consists of two representatives from each Member State on the basis of nominations made by the Member States as well as two representatives of the social partners as observers. The Commission chairs the Committee and provides its secretariat.
- 3.2.2 The Commission may consult 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

DELTA - Developing European Learning through Technological Advance. Council Decision 88/417/EEC, OJ No. L 206, 30.7.1988, p.20.

- 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.
- FORCE Community Action Programme for the Development of Continuing Vocational Training in the European Community, 90/267/EEC, OJ No. L 156/1, 21:6:1990
- EUROTECNET Community wide network of demonstration projects in the field of New Information Technologies and Vocational Training, COM (85) 167 Final.
- LINGUA Community Action Programme to promote Foreign Language Competence in the European Community. Council Decision 89/489/EEC, OJ No. L239/24, 28 July 1989.
- TEMPUS Transeuropean mobility scheme for university studies. Council Decision 90/233/EEC, OJ No. L 131/21,7, May 1990.

for selecting the various types of projects and any measures which require a Community contribution of more than 100,000 ECU.

- 3.2.3 Since the launch of COMETT II, the EFTA countries have participated in the COMETT Programme, and Joint Committees were established between the European Community and each EFTA country.
- 3.2.4 The COMETT Committee met formally on four occasions (9 January 1992, 9 April 1992, 19 May 1992 and 21 October 1992). The EC-EFTA Joint Committees met on 9 January 1992 and 20 May 1992. A list of the members of the COMETT Committee and the EFTA Joint Committees is given in Annex 3.

3.3 COMETT Information Centres

- 3.3.1 To facilitate and promote the dissemination of information about COMETT, national Information Centres have been established within each Member State and, from the beginning of COMETT II, also in the EFTA countries. The precise organisational location of each Information Centre varies between the participating countries according to individual needs and circumstances. The Information Centres' main tasks are to respond to information queries concerning the COMETT Programme, especially on projects led by organisations within their country and to produce informational material (brochures, bulletins, projects files etc). In the year under review, the Information Centres put particular emphasis on providing information for enterprises. They also organise information days, workshops and press conferences, to assist with the preparation of new applications and to disseminate COMETT project outputs. Finally, in cooperation with the UETPs, the Information Centres provide assistance for COMETT Project promoters within their country, including finding new project partners and disseminating relevant project outputs from other countries.
- 3.3.2 The Commission provides financial support towards the costs of activities undertaken by the Information Centres. In addition, the Commission supplies various forms of documentation, services and promotional material for use by Information Centres. A list of COMETT Information Centres is given in Annex 5.

3.4 COMETT Experts

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3.4.1 Following the Council Decision, the Commission established the COMETT Experts Group as an additional source of specialist technical advice and expertise. Members of the Group are appointed by the Commission on the basis of their personal knowledge of a particular technical area or sector related to the work of COMETT. The breadth of membership is such that there is at least one Expert from each participating country, ensuring awareness of the level of technology exploitation in all of these countries. The Experts met on 5/6 March 1992 and on the occasion of the COMETT conference held in Porto (Portugal) from 8 to 11 April 1992. The main objective of their meetings was to examine the project proposals received by the Commission under the 1992 Call for Applications. Their developing role in project monitoring as well as their technical advice helped to ensure that the Commission was able to select the most appropriate range of projects to achieve COMETT objectives.

3.4.2 **Project Advisers**

Because of the exemplary nature and large scale of the Pilot Projects (which had been accepted in 1990) a new approach was adopted whereby a Project Adviser was assigned to work with every Pilot Project during the project's life time. A tripartite relationship is

developed between the project coordinator, the COMETT project officer and the project adviser. This process has proved very beneficial in assuring the good development of the Pilot Projects. The Project Advisers met on the occasion of the COMETT conference held in Glasgow on 26/27 November 1992.

3.5 Technical Support

3.5.1 The Commission is assisted in the operational implementation of the COMETT Programme by the COMETT Technical Assistance Office, a non-profit organization with which appropriate contractual arrangements have been made.

3.6 Collaboration with other Community Programmes

3.6.1 An important aspect of COMETT is the potential it has for synergy with other Community programmes. COMETT complements 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 has been established both in the selection of projects and also the on-going monitoring and development of the COMETT Programme. COMETT Projects have also established links between organisations active in a number of Commission R & D Programmes. There is in particular a close link between COMETT and DELTA in view of the complementary objectives of the two programmes in the field of technology support for education and training.

In 1992, at a practical level, the links involved the following:

- Joint COMETT/DELTA presentations at key conferences and DELTA launch meetings.
- Participation in the selection process for the current phase of DELTA which started in the latter half of 1991.
- Cooperation between the two programmes with regard to COMETT Pilot Projects with close links to current DELTA projects such as, COSTEL (COMETT) and COSYS (DELTA), DEDICATED (both DELTA and COMETT), MTS (DELTA) with ECOAUDIT (COMETT), OSCAR (DELTA) with AERONAUTICS (COMETT) and JANUS (DELTA) with EMBA (COMETT).
- 3.6.2 In the education and training field COMETT complements the activities of the ERASMUS Programme for the mobility of university students, FORCE, the programme for the development of continuing vocational training, and the EUROTECNET Programme for basic vocational training for the new information technologies. Links exist also with the LINGUA and the TEMPUS Programmes.
- 3.6.3 The ERASMUS Programme was adopted by the Council in June 1987 to promote interuniversity cooperation 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 include the common policy aim of encouraging students to spend periods of recognised training in other Member States. The TEMPUS Scheme, which is designed specifically to promote the development of the higher education systems and transeuropean mobility in the countries of Central/Eastern Europe, was adopted on 7 May 1990 by the Council of Ministers. Close links have been established to ensure coordination of the overall implementation and monitoring of the three Programmes.

IV. MONITORING AND EVALUATION

4.1 Internal evaluation

- 4.1.1Internal monitoring and evaluation are important aspects of the implementation of the COMETT Programme. A variety of formal and informal methods are used to collect and analyse information at the following levels: project level, Strand level, sectoral level, and programme level.
- 4.1.2 At project level, the process begins with an analysis of project applications according to specified criteria to ensure selected projects are adequately designed. For approved projects, the formal process consists of interim and annual progress reports. In this way every project is continuously monitored to ensure its progress is satisfactory and to identify specific issues which may have wider implications. In addition, more informal contact with project promoters occurs through their visits to Brussels, attendance at conferences and other similar activities. At Strand level, a number of Strand-specific analyses and activities have been undertaken. The analyses that were launched serve as a basis for the development of sectoral networks.
- 4.1.3 At programme level, the development of the Programme has been carefully monitored with respect to both its internal design and implementation and its wider contribution to Community objectives. The contributions of the COMETT Committee, the COMETT Experts Group and the COMETT Information Centres are of particular importance, especially in providing information about the development of COMETT within each Member State and EFTA country.
- Since 1992 marked the half-way stage of COMETT II, the Commission carried out an 4.1.4 additional internal evaluation covering the period 1990-1992. The Interim Evaluation Report, entitled Transnational training for technology in Europe - the COMETT experience, sees the Programme's development as part of the recent dynamic developments and transformations within the Community. These transformations range from the creation of the biggest single market in the 1990s, to the historic developments in Central and Eastern Europe and the re-unification of Germany, to the rapidly increasing pace of technological changes. As varied as these changes are, they are united in the similar questions and efforts they demand. One of which is the demand for closer cooperation between industry and universities. Another principal issue is the development of human resources, and education, training and re-training which have become key priorities. COMETT is a programme of university-industry cooperation which tackles these issues on a transnational basis. It aims at dealing with the most telling immediate and longer-term issues for both education/training and industry.

The Interim Evaluation Report records that the results have been very encouraging in terms of the response to the annual Call for Applications and in terms of the new projects selected for support, both confirming that COMETT II has achieved its objectives. Not only has there been a tremendous increase in the number of projects, but one can also observe an improvement in the quality of the applications as well as a widening of the network.

In order to combat the growing skills deficit and to safeguard the competitiveness of European industry, COMETT has reinforced its activities relating to student and personnel exchanges, the organisation of courses and the development of training materials. Its priority concern has continued to be the forging, at European level, of universityenterprise partnerships, to promote initial and continuing training in technology, and the application and transfer of technological innovation.

In brief, COMETT II has achieved the following outputs during 1990-1992:

- During the first half of COMETT II 2,000 training materials were developed. It is estimated that so far more than 200,000 people have used, or are using, training materials funded by COMETT II.
- In this period COMETT II funded 4,000 course sessions giving approximately 100,000 people the opportunity to train in modern technologies. During 1990-1992 all in all 300,000 people benefitted directly from the COMETT Programme.
- During the first three years of COMETT II, more than 15,000 student exchanges and more than 300 personnel exchanges have been supported by the Programme. There is a huge interest in these activities with the first years of COMETT-II supporting four times more exchanges than the entire phase of COMETT-I.
- The number of SMEs involved has increased since the beginning of the Programme, rising from 64% in COMETT I to 73% in 1992. In 1992, 80% of the projects submitted involved at least one SME.
- In the period under review, the Programme involved 9,3(0) enterprises, 2,4(0) universities and 4,100 other organisations.
- So far, 10,000 enterprises, 2,400 universities and higher education institutions and 4,100 other EEC and EFTA organisations have participated in COMETT II. It is estimated that by 1994 some 20,000 European institutions will have been involved in the COMETT Programme.
- Since the beginning of COMETT II the number of enterprises involved has significantly increased. Moreover, the enterprises take a more and more active role in the projects. This is demonstrated by the fact that during 1990-1992 industry's financial contribution to the projects has steadily increased.

With reference to future perspectives, the Interim Report estimates that for the entire duration of the Programme, COMETT will be funding close to 30,000 student exchanges together with approximately 7,000 course sessions. By 1994 close to 3,000 training materials will have been supported by the Programme. This means that by the end of the second phase of COMETT II no less than half a million people throughout Europe will have directly benefitted from the Programme.

4.2 External evaluation

The third external evaluation of the COMETT programme was launched by the Commission in May 1992.

The two earlier external evaluations resulted in the "Coopers & Lybrand Report" (1989) and the "Ecotec Report" (1991). This third external evaluation covering the first three operational years of COMETT II will take into account the findings of these earlier evaluations.

The originality of the third evaluation is that it is based on a "three-pronged" approach of evaluating the COMETT programme:

• Following the Tender launched by the Commission in May 1992, an independent consultancy firm, *GMV Conseil S.A.*, Boulogne (France), has been appointed to carry out the third external evaluation of the COMETT Programme. This company will operate through a consortium involving it with 8 other organisations. The main objective of the 3rd evaluation is to undertake a detailed analysis of COMETT II in relation to the achievement of the objectives laid down

in the Council Decision with a view of guiding the Commission in the formulation of any proposals for further actions leading on from COMETT II. This evaluation will take place between October 1992 and April 1993. The main objectives of the evaluation carried out by *GMV Conseil S.A.* will be to examine the entirety of activities supported under COMETT and the results achieved by COMETT operators in the field.

An analysis of the results of COMETT in each Member State, to be conducted by the national authorities. This concerns an evaluation of concrete benefits obtained from COMETT in each Member State, the general impact of COMETT and the links of COMETT with relevant national and regional policies. Countries have themselves decided on the *process* by which these reviews have been conducted. Some countries have arranged for a specific organisation (e.g. the Information Centre) to organise the review and carry out the work. However, the Commission has stressed that the reviews should involve key actors of COMETT at national level, notably officials in the Ministries responsible for, COMETT experts, COMETT Information Centres and some COMETT promoters.

• A strategic analysis of the programme and the development of a possible new institutional context by a panel of eight experts appointed by the Commission. The panel consists of a balanced representation of industry and higher education and of the various Community regions, all experts having extensive experience in the area of university-industry cooperation. The panel will review the conclusions of the evaluation performed by *GMV Consel* and will participate in the evaluation exercise in order to develop, in the form of "scenarios", recommendations regarding future Community actions in the areas currently covered by COMETT.

It is on the basis of this three-pronged external evaluation that the Commission will be able to draw up a proposal to the Council and Parliament for further Community action in the field of universityindustry cooperation. The Commission's proposal is foreseen for the summer of 1993.

4.3 Positive Actions

The *Positive Actions* project launched by the Commission in 1991 had the principal aim of strengthening the development of COMETT in economically less privileged countries and regions of the Community.

The Positive Actions fall into the following five main categories:

- National studies and promotion measures
- UETPs (networking and training of UETP managers)
- Student placements
- Actions for the promotion of industrial participation
- Sectoral activities
- 4.3.1 As a direct response to the *Positive Actions* carried out under these different headings, COMETT registered in 1992 a particularly large number of proposals for UETPs from Spain (8), Italy (16), Switzerland (13) and Norway (6).

4.3.2 Sectoral Studies

Within the framework of Positive Actions a COMETT Sectoral Strategy scheme was launched in 1991. Ten carefully selected COMETT sectoral UETPs were contracted to examine the progress in the following ten sectors: Advanced Manufacturing Technology, Agro-food, Biomedical Engineering and Medical Technology, Biotechnology, Environment, Materials, Mechanical Engineering, Microelectronic Technology, Software Technology and Engineering, Technology and Innovation

Management.

These ten studies were completed in 1991/1992 and are now available. They provide the basis for a synthesis which will later feed into the thinking-process for the development of the Sectoral Strategy Scheme.

4.4 Conferences

In the year under review, COMETT participated for the first time in the biggest annual industrial fair in the world, the Hannover Fair, which took place between 1 - 8 April, 1992. The event was funded by the Commission of the European Communities, Task Force Human Resources, Education, Training and Youth within the framework of the Positive Actions initiatives. The COMETT presentation as such was organised by UETP OST, the regional UETP based in the Technology Transfer Centre of Hannover University. Eight COMETT projects in the energy and environment sectors exhibited their outputs at the COMETT stand. With participants coming from Finland, Greece, UK, Belgium, France, Ireland, Sweden and Germany, the exhibition reflected the transeuropean character of the COMETT Programme. As far as PR activities are concerned, a press briefing was held on the COMETT Technical Assistance Office also contributed to a symposium on career prospects and the effects of international mobility. - Based on the experience gleaned from the Hannover Fair, a Fair Guide was later published by UETP OST. This Guide contains detailed information on all stages of fair participation, such as preparation, coordination and follow-up.

The Vienna Seminar which took place on the 11 - 12 June 1992 focused on marketing COMETT products. The main products of the COMETT programme were defined as "European mobility", "Continuing education courses" and "UETP services". One of the clear messages the Seminar put forward was that UETPs must move away from ready-made, marketable teaching products to interactive process and product development. It was against the backdrop of this observation, that the delegates spoke of the experience gained from marketing student placements, courses and UETP services in their different countries.

COMETT organised a number of workshops entitled "Marketing and Management Tools for Improving the Management of Students Placements". The workshops were specifically targeted at those responsible for organising and monitoring student placements; they were held in Athens (between 31 August and 4 September 1992) and La Rochelle in France (between 10 and 14 September 1992). The 70 participants represented almost half of the total number of UETTs. The fact that these training programmes were organised together with the high rate of participation illustrate the growing success of student enterprise placements throughout Europe:

A conference was held in Glasgow, 26 - 27 November 1992 for COMETT's 28 pilot projects. Organised by the Commission of the European Communities (Task Force Human Resources, Education, Training and Youth) in conjunction with the UK presidency of the EC, the Glasgow Conference focused on issues crucial to the development of COMETT pilot projects. Its main purpose was to provide a forum for the identification and discussion of specific problems common to this type of COMETT project, such as qualification and accreditation problems, advertising and marketing strategies, copyright and intellectual property rights as well as the general difficulties adherent to managing transnational projects. One direct result of the pilot project conference is the Commission's commitment to setting up working parties and codes of good practice to help resolving these issues. Glasgow confirmed once again COMETT's increasing importance in establishing a wide range of university-industry dialogue and cooperation throughout the Community.

4.5 Some lessons from the COMETT Programme

In the year under report, the Commission (Task Force Human Resources) issued a *Communication* "European Higher Education-Industry Cooperation: Advanced training for competitive advantage".

The Communication follows on from three Memoranda issued in 1991 on higher education in the Community, on open and distance learning in the EC, and on vocational training in the EC for the 1990s.

This Memorandum is targeted at those concerned with policy and implementation of cooperative ventures between higher education and industry. It collects the different national experiences of higher education-industry cooperation, and it also draws on COMETT's particular knowledge of setting-up and implementing university-industry partnerships. Analysing this wide range of information, the Communication is intended to contribute to the development of a specific strategy for future cooperation.

A significant point arising from this investigation is that

higher education-industry co-operation is not an end in itself. The most successful cases of co-operation occur when the co-operation is adopted as a means of achieving specific goals. Also, real co-operation is best achieved when those involved agree that the co-operation gives results which are demonstrably better than would be achieved by higher education or companies working on their own.

The document shows that Europe has become aware of the importance of this cooperation. Nevertheless, the mechanisms set up should increase their impact so that the Community can reapall the potential benefits. These benefits may be summarised as follows:

- accelerating the application of basic research findings in industry
- improving the provision of technical skills
- increasing technology transfer across sectors and regions

The report further emphasises that since university-industry structures enable actions to be carried through in an organised and sustained manner, 'they assist visibility, communication, and good financial management'. These consortia can play a vital role because they are at the meeting-point between the supply (higher education) and the demand (industry) sides of the equation. One of the key messages is that

collaboration in education and training projects is the most effective way of matching supply and demand. Projects provide a focus for addressing real business problems, both short and long-term. When managed well, they also provide measurable and cost-effective frameworks for building continuing partnerships over a sustained period. Spin-off effects in other areas such as research and development will often occur as a result of such projects.

The purpose of the document is to set out some advice and good practice for people and ... organisations wishing to set up such cooperation schemes. For example, the document offers several key messages:

- to be effective, the cooperation must rest on an unequivocal understanding of and respect for the nature of both higher education and industry
- higher education institutions and business must integrate a strategy for higher education-industry cooperation into their tasks and institutional plans
- the higher education-industry cooperation schemes such as those created in COMETT are genuine interfaces offering a framework for dialogue which ideally complements the measures organised by the universities and businesses.

However, one of the key lessons for the future is that while Europe has become aware of the importance of education-industry co-operation, the activities must increase their impact so that the Community can fully benefit from the results. While public policies have already supported an 'indispensable complementary' between higher education and industry, yet these networks need to be directed towards priority areas of European socio-economic development.

Conclusion

1992 marked the half-way stage of the COMETT II Programme. Many activities launched earlier in the first phase of COMETT II were now firmly established and began to register their real results and benefits, such as for example the projects accepted in 1990 under Strand Cb (Joint Training Projects) and Strand Cc (Pilot Projects), and the initiatives carried out under Positive Actions in 1991. But perhaps this year is most remarkable for the large number of new UETPs proposed. Out of the accepted projects 23 new regional UETPs, and 19 sectoral UETPs were created bringing the total up to 205 COMETT UETPs. COMETT has met its objectives. There is no doubt that the Community is awakening to the recognition that cooperation between industry and education, training and research institutions is vital. COMETT has served as a catalyst to increase the awareness of this key issue throughout the Community. We now stand at the threshold of the second phase of COMETT II and the experience gleaned so far helps to strengthen and deepen the all-important university-industry dialogue and cooperation.

ANNEX 1

Statistical Overview





COMETT Office - April 1992 - bafcfa92











COMETT Office - April 1992 - allcfa92

ANNEX 2

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COMETT Pilot Projects

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COMETT Pilot Projects

EUROFORM - Centre européen de didactique du secteur microélectronique et des technologies associées. (F)

The purpose of this project is to create a European centre for education in microelectronics and related technologies, consisting of a resource centre, an education centre for training and a data bank on courses available throughout Europe.

AMADIS - Development of advanced training activities and educational software in computational engineering. (E)

The objective of this project is to improve the level of instruction and training of European engineers, students and academic staff, in the theory and application of computational mechanics for the solution of engineering problems.

ATLANTICA (F)

The principal aim of this project is the development of training methodologies for the European Atlantic regions, on the basis of transnational cooperation in adapted technology training, productivity and diffusion mechanisms.

BIT - Biotechnology in Training (UK)

This project aims at developing and harmonising education and training in the field of biotechnology, through laboratory-based short courses and complementary multimedia distance learning.

IN#TEL#EC - INtegrated TELecommunications training for the European Community. (P)

The goal of this project is to meet skill and training deficits for telecommunication technicians through multimedia training modules, and devise and publish a European syllabus for the establishment of common standards for training.

RISQUES TECHNOLOGIQUES - Maîtrise des risques technologiques. (F)

This project aims at the development of a multidisciplinary training programme using modular and capitalised courses, in the field of management of technological risks, integrating economical, technological and organisational aspects.

APECE - Advanced production Engineering Continued Education. (N)

The objective is to develop and disseminate a continuing education programme for distance learning in production engineering for the mechanical and electrotechnical industry, using modular courses.

ESDEP - European Steel Design Education Programme. (UK)

This project will result in a complete, flexible and cost effective programme of educational material for the training of students and retraining of existing enigneers in steel design and construction.

QAMT - Qualitätssicherung Medizintechnik. (D)

To meet the demands in the quality assurance in the field of medical technology, this project will eloborate education and qualification courses and materials. It hopes to establish a large network of university-industry cooperation.

ESAVS - European school for postgraduate veterinary training and continuing education. (CH)

The main objective of this project is to create postgraduate courses, including distance learning systems, leading to Europe-wide accredited diplomas in all fields of advanced veterinary science.

EMBA - Management of technology in a European environment. (NL)

The goal of this project is to establish a European network for the production, distribution and delivery of distance learning course modules dealing with the management of technology in a European environment.

BIOMERIT - Increased innovation and industrial development in the European agro-food sector through biotechnology exploitation. (IRL)

This project will provide training in agro-food biotechnology in the areas of Biomolecular Engineering and Bioprocessing. It develops methods for the identification of spoilage pathogenic microorganisms in food systems.

EUROPIC (NL)

The project deals with the European development of postsecondary training of students and trainers in Integrated Circuit fabrication techniques. The developed material will be exploited by the training institutes and the IC-industry.

EUROHOT - Design, development, evaluation and dissemination of an open, flexible, distance learning scheme of advanced technical training for the European highway construction and maintenance industry.(IRL)

The objective of this project is to economically deliver, through self-extension, an open, flexible multimedia scheme of advanced technical training for the European highway construction and maintenance industry.

TRITON (GR)

This project develops training material and courses on the technology for environmental protection in water recources management.

EMOT - European masters programme in management of technology. (UK)

This project is concerned with the development, marketing and dissemination of postgraduate distance learning modules in technology. The modules are part of a masters degree for students, managers and qualified trainers.

AMES - Advanced Microelectronics Educational Service. (B)

This project will create a structure using courses, software and satillite broadcast, for the training of designers of digital microelectronic circuits and systems for particular specialised applications (ASIC).

AGRO-BIOTECH - Applications of biotechnology in agriculture and agro-food industrie.(GR) The goal of this project is to create a training infrastructure to help managers, technicians and university graduates to develop a working knowledge of the applications of biotechnology in agriculture and the agro-food industries.

JESSI - JTTT-JESSI Transnational Technology Training. (D)

The main target of this project is to extend the range of operation of the JESSI-SMI support project to other countries and to maintain European competivity in microelectronics.

TALAT - Training for Aluminium Application Technologies. (D)

This project aims at devising, developing and testing training material in the field of advanced aluminium application technologies, and at giving the qualifications for European aluminium application experts.

COSTEL - COurse System for TELecommunicationed training and innovation management. (DK) The aim of this project is to develop and market a course system for training of trainers and computer supported cooperative work with on-line support, concerning the use of computer and telecommunication based solutions for training.

E.T. - Education in the transport sector E.T. project. (DK)

- The project aims at improving qualifications in the transport sector, by developing and distributing educational courses concerning informatics and telematics relevant for staff in the transport sector.
- EUROMOTOR Training modules Innovation in motor vehicle design and manufacture.(UK) To improve the knowledge base of the European motor industry, this project will develop high level collaborative training programmes, using modules and multimedia .techniques, in motor vehicle design and manufacture.

TQC - Total Quality Control in production industry.(D)

The purpose of this project is to produce and distribute course modules in total quality control with direct application in management and production for enterprises (especially SMEs).

EUROCHEMOMETRICS - Chemometrics and qualimetrics for the chemical, pharmaceutical and agroalimentary industry.(B)

This project concerns industry-oriented training and transfer of knowledge of chemometrics and qualimetrics techniques, using introduction and integration courses and distance learning and multimedia techniques.

ECATA - European Consortium in Advanced Training for Aeronautics. (F)

This project is concerned with the creation of a structure for advanced education for engineers, to improve cooperation and training abilities and formation skills in management and technical integration on aerospace programmes.

PALIO - European standard qualification in the design, delivery, marketing and evaluation of multimedia open learning.(1)

By using open learning techniques, the PALIO project will implement training actions for professionals involved in the design, management and evaluation of open and distance learning schemes and support systems.

TOPICE - CEEC advanced courses cycle 1991-1995. (F)

By designing and implementing advanced courses for the development and transfer of technical and managerial skills of civil engineers, this projects increases the efficiency of civil engineering and construction enterprises.

ANNEX 3

COMETT Publications 1992

COMETT Publications 1992

Development of COMETT I (Spring 1992)

This is an internal monitoring report on COMETT I and covers the period 1987-89 during which COMETT projects were launched each year. The conclusions offered in this report take account of the content and outputs of each project supported under the COMETT Programme.

COMETT Report of Activities 1991 - July 1992

This document represents the Annual Report referred to by the terms of Article 5 of the Decision of the Council establishing the COMETT programme. The purpose is to formally record an account on the progress made in the implementation of the COMETT programme in 1991.

COMETT Interim Evaluation Report 1990 - 1992 : "Transnational Training for Technology in Europe - the COMETT Experience"

This document is an internal monitoring report on the first half of COMETT II. Covering the period 1990-1992, the report records encouraging results in terms of the response to the annual Call for Application and in terms of the new projects selected for support. The evaluation confirms an improvement in the quality of the applications as well as a strengthening of the university-enterprise network.

COMETT Catalogue of Outputs

This document gives a concise overview of all the outputs under COMETT I.

COMETT Bulletin

No 13	March 1992
No 14	July 1992
No 15	December 1992

The COMETT Bulletin appears three times a year and contains a range of articles relevant to COMETT. It gives important information on COMETT projects and is directed towards all organisations interested in the programme.

Application Package 1993 (Autumn 1992)

The Application Package is addressed to those intending to make an application for support under the COMETT programme. It concentrates on detailed guidelines for submitting applications and includes the application forms to be used for submitting projects under the current Call for Applications.

COMETT Courses Register (Nos 1 - 4)

Arranged under technology sectors, this document gives details on current courses supported by COMETT in the Member States and EFTA countries.

ANNEX 4

COMETT Committee Members

COMETT EFTA Joint Committees Members

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ANNEX 5

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