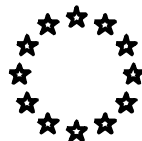


2000

**EXTERNAL MONITORING REPORT
ON THE
SPECIFIC PROGRAMME
FOR
RESEARCH AND TECHNOLOGICAL
DEVELOPMENT**



IN THE FIELD OF

**PROMOTION OF INNOVATION
AND ENCOURAGEMENT OF
PARTICIPATION OF SMEs**

MAY 2001

This report is part of the series of the external annual monitoring reports prepared for the EC Framework Programme and the Euratom Framework Programme, and their constituent Specific Programmes.

The Commission has over the years been placing increasing emphasis on the evaluation of Community R&D activities. As part of the process of continuous improvement, a new programme monitoring scheme has been introduced in 1995. The new scheme involves independent external monitoring experts and a timely response by the Commission Services to the recommendations produced by the experts. The new scheme thereby provides the basis of a quick response mechanism to programme developments and should give advice on key issues.

This report is the second covering the Fifth Framework Programme; the report also highlights progress in relation to ongoing activities under the Fourth Framework Programme. The report should help reinforce establishment of best practices, identify and correct weaknesses in programme implementation, and facilitate future multi-annual programme evaluation.

The report consists of three parts:

Part A: *External monitoring report prepared by the following independent external experts:*

Mrs. Prof. Dr. Karin Anstoetz (Rapporteur)

Mr. Jean-Pierre Chassetuillier

Mr. Jorgen Lundsgaard (Mr. John Engell)

Mr. Giorgio Tuninetti

Part B: *Responses of the Programme Management to the external monitoring report.*

PART A:

Report of the external Monitoring Panel

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1 EXECUTIVE SUMMARY

The programme “Promotion of innovation and encouragement of SME participation” (“Innovation and SMEs”) serves as a:

- ✓ “service provider”, offering information and assistance to SMEs and other innovation actors and supporting the thematic programmes of FP5 in their efforts to promote innovation and increase the participation of SMEs;
- ✓ “clearing house”, collecting and analysing information on innovation trends and policies at European and national level;
- ✓ “test bed”, carrying out pilot actions to test new ideas in some areas of innovation policy.

“Innovation and SMEs” is endowed with an operational budget of 336 M€. Spending commitments for operations totalled 47,5 M€ in 1999 and 101,6 M€ in 2000.

In 2000, the programme launched and evaluated three calls; “New approaches to technology transfer”, “Regional innovation actions” and “Access to private innovation financing and tools for better knowledge exploitation”. It also completed the contract negotiations associated with two calls launched in 1999, “Mechanisms to facilitate the setting-up and development of innovative firms” and “Innovation relay centres”. The other key parts of the programme were already in place at the end of 1999 and continued their operations through 2000. These include the SME Specific Measures (CRAFT and Exploratory Awards) and “Economic and technological intelligence projects”, the information and assistance infrastructure (the on-line service CORDIS and the network of existing IRCs, Innovation Relay Centres), and the “Innovation projects”.

In the view of the 2000 Monitoring Panel, good progress has been made in many parts of the programme. Despite the difficulties inherent to FP5, innovative results were achieved by the contract consortia and disseminated by the Commission - supported by the 1999 monitoring recommendations.

“Innovation and SMEs” has provided a good contribution to the debate on research and innovation in Europe and is in the front line of participation of Accession Countries with its network of IRCs. It is also worth mentioning that concrete action was taken on most, although not all, of the recommendations from the previous monitoring exercise. While appreciating the results that have been achieved, the 2000 Monitoring Panel perceives some cause for concern, and recommends a number of specific action points for improvement. The main areas of concern, which are common to both, “Innovation and SMEs” and the thematic programmes, relate to the undertaking of an exceedingly wide range of commitments, the complexity of internal regulations and rigidity of procedures, and the somewhat weak connection between the FP and the world of venture capital.

The following main recommendations to the Commission are equally urgent and should be acted upon within the lifetime of FP5:

- 1 Take action to improve the effectiveness of the Co-ordination Group between the Innovation Cells as a place where good practice is transferred across programmes.
- 2 Take measures - such as the exchange of personnel, transfer of know-how by teaching and training, consultancy – for closing the gap between the IRCs based in Member States and those set up in the Accession Countries.
- 3 Launch actions to measure, assess and, if necessary, increase the impact of “Economic and technological intelligence projects” on their final beneficiaries, i.e. SMEs.

- 4 Collect more detailed statistical figures and indicators on the participation of SMEs in FP5 and on the structure of the relevant consortia.
- 5 Shorten the cycle of updating of CORDIS and take other measures to improve the quality of its databases – such as the development of interactive facilities for the collection of data, and data mining and other activities to learn more about users' preferences.
- 6 Make plans to bring the current pilot version of Technology Market Place to the latest stage of on-line services with the explicit objective of commercialising the outcomes of EU funded projects.
- 7 Consider two new specific rules for encouraging SME participation:
 - a) provided that a contract is eventually signed, project costs incurred in the period between the time when a positive proposal evaluation is received and the contract is signed should be reimbursed;
 - b) give SME start-ups with insufficient capital the option to take part in the projects, provided that they accept to be paid according to deliverables (this might also help improve the quality of work-plans).
- 8 Enhance co-ordination between the innovation activities of the Commission and the Innovation 2000 Initiative carried out by the European Investment Bank.
- 9 Review the guidelines for the TIP (Technology Implementation Plan) in order to confirm its viability as a means for track keeping of and promoting exploitation – including provision of support to SMEs for IPR protection.
- 10 Strengthen the base of data drawn from the Community Innovation Surveys with a view to improving the quality of the Innovation Scoreboard.

2 INTRODUCTION

Brief description of the Programme

Innovation is vital for the development of the European economy, and SMEs play an essential role in the generation and dissemination of innovation. The three main duties of the programme “Promotion of innovation and encouragement of SME participation” (“Innovation and SMEs”) reflect this link. The programme serves as a:

- ✓ “service provider”, offering information and assistance to SMEs and other innovation actors and supporting the thematic programmes of FP5 in their efforts to promote innovation and increase the participation of SMEs;
- ✓ “clearing house”, collecting and analysing information on innovation trends and policies at European and national level;
- ✓ “test bed”, carrying out pilot actions to test new ideas in some areas of innovation policy.

Innovation and SMEs is endowed with a total budget of 363 M€. As administration and staff expenditures statutorily absorb up to 7,35% of total budget, the money available for operations amounts to 336 M€. The implementation of the programme is shared between Directorate C (“Innovation”) of DG Enterprise and Directorate A (“Co-ordination of Community Actions”) of DG Research, roughly in the proportion 7:1 in terms of operating budget. The Director of Directorate C of DG Enterprise is responsible for the programme. Spending commitments for operations totalled 47,5 M€ in 1999 and 101,6 M€ in 2000.

Innovation and SMEs in 2000

In 2000 the programme launched and evaluated three calls; “New approaches to technology transfer”, “Regional innovation actions” and “Access to private innovation financing and tools for better knowledge exploitation”. It also completed the contract negotiations associated with two calls launched in 1999; “Mechanisms to facilitate the setting-up and development of innovative firms” and “Innovation relay centres”.

Other key parts of the programme were already in place at the end of 1999 and continued their operations through 2000. These include the selection of the proposals submitted under the open calls for SME Specific Measures (CRAFT and Exploratory Awards) and “Economic and technological intelligence projects”, the running of the information and assistance infrastructure (the on-line service CORDIS and the network of existing IRCs, Innovation Relay Centres), and the management of the “Innovation projects” launched in FP5 and of their forerunners started in FP4, the “Technology transfer and validation projects”.

Examination of the Action Lines

The panel has examined the ten action lines of the work programme in the light of the monitoring issues set out in the terms of reference. The panel's judgement is based on the following data and information sources:

- ✓ Review of data and information provided by the Commission;
- ✓ Interviews with the programme director and the heads of unit responsible for the implementation of the programme;
- ✓ Discussions among the panel members during four meetings held in Luxembourg in the period December 2000 till March 2001.

Section III 'Analysis of the Programme Execution and Progress' illustrates the findings of the panel. Instead of the issue-based structure suggested in the guidelines to the monitoring panels, a more practical approach was adopted to structure the analysis in five subsections grouping related activities. Two additional subsections discuss the implementation of previous recommendations and some inter-programme co-ordination activities that are specific to Innovation and SMEs.

The major conclusions and recommendations drawn from the analysis, including some remarks on the important issues of participation of Accession Countries, European Added Value and the European Research Area, are presented in Section IV: Major Trends, Conclusions and Recommendations.

3 ANALYSIS OF THE PROGRAMME EXECUTION AND PROGRESS

3.1 IMPLEMENTATION OF MONITORING RECOMMENDATIONS

The Commission Services have in general made good progress on implementing the eight main recommendations given by the 1999 Monitoring Panel. The experience gathered and lesson learned from the FP4 pilot actions and studies are being analysed (recommendation 1), and a booklet (EUR report no. 17043) on the main findings of the various innovation policy studies edited by OPOCE was published in March 2001.

An electronic tool for processing the FP4 TIPs has been developed (will be adapted for handling the slightly different FP5 TIPs). This tool will facilitate entry of data into CORDIS and the production of statistics including patents resulting from the EU programs established (recommendation 2). However, so far no statistics resulting from this effort are available. Further, as pointed out in the Commission Services' response to this recommendation, many patent applications are filed after the completion of the projects. This severely limits the value of such statistics. Therefore it may be worthwhile to review TIP to ensure that it is able to provide the required essential data relating to patents, intellectual property rights etc.

Concerning CORDIS (recommendation 3) some progress on improved user friendliness and increased efficiency has also been made in particular the new home page introduced in January 2000, and the much needed 'content management system' to be implemented in 2001. Also a

hyperlink facility has been implemented in the project database. Progress on machine translations is expected in 2001 (new release). The Technology Market Place has been implemented but not in the form of a real Market Place. It is more of an information database for successful projects. A fully-fledged proposal has been elaborated during year 2000. However, the implementation of this proposal depends on availability of the necessary resources and the presence of a policy to create real Market Place for project participants, the Commission and commercial customers. Progress on other improvements (standard profiles, management of e-mail lists etc.) requires a new architecture of the CORDIS infrastructure, and may be hampered by staff shortage.

Recommendation 4 on reduction of project time for ETI software projects appears also to have been followed in that the average duration of the 53 projects selected for ETI actions in 2000 is 24 month.

Important progress beneficial for SME participation has been made on simplifying procedures, shortening response time, and encouraging co-operation between different agencies (recommendation 5). The forms for negotiating CRAFT contracts have been reduced from 72 to 8 pages. Upon completion of proposal evaluation, the SMEs are now informed about the results within 6 weeks (13 weeks in FP4). Further, the improved co-operation between the agencies can be measured in a marked reduction in the number of submitted non-eligible proposals (cf. next Section). The increase in the number of Exploratory Awards (25%) and CRAFT projects (300%) submitted under FP5 to date relative to the equivalent period of FP4 shows success for the overall changes in the SME specific measurements from FP4 to FP5.

Progress concerning the mandate and objectives of the Innovation Cells? in the different thematic programs (recommendation 6) seems also to have been made. However, the first draft report on the year 2000 progress is not yet available, and the effectiveness of the Innovation Cells? still appears largely to depend on the positive attitude of the persons involved rather than mandate.

Concerning recommendation 7 on SME's possibilities for addressing any contact point (the closest: IRC/NCP/SEP) on matters concerning proposals etc., i.e. 'sign-posting', some progress has been made, but it appears that there still is a long way to go (years) before the desired integrated network has been developed and implemented. A question to any gateway in such a network should give the same answer.

Little or no progress has been made on the important but difficult question of how to find ways for facilitating the participation of SME start-ups, whilst protecting the financial interests of the Community (recommendation 8). This is an urgent matter if the Commission wishes to encourage RTD leading to breakthroughs rather than the present favoured stepwise technology improvements.

3.2 ENCOURAGING SME PARTICIPATION

Although the SME definition used for FPV is more restrictive than the one used under FP4 the number of Exploratory Awards (25%) and CRAFT projects (300%) submitted under FP5 to date has increased substantially relative to the equivalent period of FP4. Some 2500 proposals involving 7500 SMEs were submitted until September 2000. Of these 41% of the Exploratory Awards and 39% of the CRAFT projects were retained for funding, involving a total of some 3000 SMEs (allocated EC funding some 170 MEURO). This shows success for the overall changes in the SME specific measures from FP4 to FP5.

No data are available to show whether this success is due to the changes introduced in the general conditions for such projects (Exploratory Awards: more restrictive; CRAFT: relaxation of funding rules for cost distribution between SMEs and RTD performer), or if this is due to an increased quality and effort of the other SME specific measures (NCP, SEP). The decrease in the number of non-eligible proposals submitted from 15% in FP4 to 12% in 1999 and 7% at present is seen as a clear indicator of the rising quality of information and assistance provided by the SME help-desk and NCPs.

Analysis of data on SMEs participating in EU RTD programs shows one-third of these to be 'technology developers', 62% to be 'leading technology users', and 4% 'technology followers'. It would be useful to have these data broken down according to project type (e.g. SME specific measures and 'normal' thematic RTD projects). According to the interview data the SME participants in the CRAFT projects mainly are from the traditional industries.

For FP5 contracts signed in year 2000 the time taken from the closing date of the calls to contract signature varied from 6 to 15 month (core indicators Table 2.1). Two-thirds of the contracts involved were signed within 9 month of the closing date. In order to encourage SME participation and front-runner RTD projects serious efforts should be made to reduce the time delay between proposal submission and contract signature.

An analyses of the factors causing the delay between proposal submission and contract signature should be made based on all types of signed FP5 contracts in order to pin-point the main reasons for these delays and find ways to remedy the situation. Possible remedying options include:

- ✓ provided that a contract is eventually signed, project costs incurred in the period between the time when a positive proposal evaluation is received and the contract is signed should be reimbursed;

Economic and Technological Intelligence Actions

More than 150 proposals were submitted under the open call until July 2000. More than 60 were retained for funding, but only 53 of them have finally been launched due to usage of all the available budget of 29.3 MEURO. The open call was therefore closed in November 2000.

There was a good balance of actions across all thematic programmes: 26% relate to the Growth programme, 23% target the Quality of Life programme, 17% relate to the User-friendly Information Society programme 9 % to Energy and Environment. Some 25% of retained projects relate to more generic topics such as stimulating the participation of SMEs from less developed European regions or training and accrediting members of business support networks. Three actions in particular focus on the needs of organisations from States candidate

to EU Membership, whilst 60% of the actions have at least a partner from these countries, thus integrating these intermediaries into the EU.

For the last two years of FP5, DG Research has set itself four main objectives:

Strengthen the network of SME NCPs (increase quality, exchange best practices, provide tools such as a dedicated intranet).

Continued efforts towards simplifying the CRAFT scheme (further simplification of Contract Preparation Forms and submission modalities, streamlining of negotiations).

Encourage the participation of SMEs from countries negotiating accession in the EU. Besides the ETI actions mentioned above, special events and actions will be organised.

- ✓ Explore ways to encourage the participation of "start-up" SMEs

3.3 INNOVATION PROJECTS

The general objective of this action line is to “promote, validate and implement trans-national schemes for taking-up new technologies and enhancing know-how”, fostering technology transfer and providing a testing ground of new approaches in FP5 thematic programmes. The action line supports projects that emphasise the non-technical aspects of the innovation process and integrate technological, economic, organisational, social factors and other activities needed for the successful implementation of innovation.

Contracts include an interim assessment milestone: at the completion of the validation phase after 6 months, projects are reviewed and need Commission approval to proceed with the demonstration phase. Since projects are generally long (2-3 years), such validation is highly valuable.

The first call for the innovation projects and accompanying measures, launched in 1999, led to the reception of only 44 proposals, much less than expected. 21 proposals were selected: 15 projects and 6 accompanying measures (the majority of them assisting innovation projects in forming clusters).

Contracts were signed in 2000 for a total budget of 16.5 M€ (i.e. 0.8 M€ per project on the average). All contracts were signed 8 to 9 months after evaluation. The proportion of SMEs is high: 55% of participants. Accession countries represent 6.4% of contracts signed in 2000, which is encouraging.

Call 2, launched in 2000, shows a satisfactory evolution in the number and quality of projects. Communication was improved and more emphasis was put on the non-technical aspects of the innovation process. 124 proposals were received and 30 projects selected. Call 2 has also achieved the objective to mobilise different actors in the socio-economic environment. The comparison of Call 1 and Call 2 shows a stable participation of SMEs at a high level (over 50%) and no significant change for the proportion of Accession countries (8% for incoming proposals, 5% for selected projects).

The observation of Call 1 and Call 2 leads to some remarks:

The main criterion of selection, “their potential (of projects) to contribute as showcases to the implementation of the European innovation policy”, may be difficult to evaluate consistently in a practical way. Less technically oriented projects imply more refined multicriteria evaluation, and therefore the consistency of the evaluation procedure may be questioned. Although the programme is emphasising “mature” technologies in order not to increase the risk of projects, their time frame (up to 3 years) may raise the issue of obsolescence issue.

The Panel acknowledges that various clustering actions initiated from Call 1 and Call 2 projects are interesting. However, the scope of the programme may be too large to expect synergy and reach the critical mass required to achieve useful results. Therefore effective project clustering may be difficult to achieve.

3.4 CO-ORDINATION OF INNOVATION ACTIVITIES ACROSS FP5

Responsibility lies with Innovation and SMEs for the co-ordination the activities carried out by other programmes in relation to innovation and SMEs¹, in particular the activities carried out by “innovation cells” within the thematic programmes. As concrete examples of themes for co-ordination, the Council mentions the design of mechanisms to facilitate the exploitation, transfer and evaluation of results.

The Commission has appointed an ad hoc Co-ordination Group to perform the task. The Group consists of representatives from the thematic programmes (usually the officers in charge of the innovation cells), the Joint Research Centres, and Innovation and SMEs, which chairs the Group and provides its secretariat.

The Co-ordination Group is basically a forum where participants exchange their views and experience five or six times a year. In addition, the Group has launched two training initiatives for project officers in 2000, i.e. IPR seminars and a seminar on the non-technical aspects of technology transfer. “Innovation and SMEs” hosted both initiatives.

Till now the Co-ordination Group has fallen short of the expectations that the words of the Council seem to imply. This is not surprising since a distinct budget line and clear responsibilities did not accompany these words. In other terms the money for launching activities within the Group has to be sliced off the existing expenditure items of Innovation and SMEs and of the thematic programmes. Moreover, the innovation cells generally lack of resources and staff and are organisationally remote from the key actions (i.e. from the place where money is actually spent on research and, hopefully, innovation)². Finally, there is no line of authority between the Group members.

¹ See Annex II of the Council Decision of 25 January 1999 adopting the Innovation and SMEs programme.

² As of 3 January 2001, the DG Research, which is in charge of three thematic programmes, has a new organisational structure. The new organisation chart does not show the innovation units. (<http://www.europa.eu.int/comm/dgs/research/pdf/RTDorganigramm012001.pdf>).

There is therefore a clear need to rethink the arrangement. Co-ordination across the programmes of FP5 is achieved daily in many ways and it might appear that one more place for co-ordination is of marginal benefit. This is not true. The Co-ordination Group is probably the best place to review the structure of the Technology Implementation Plan and discuss its potential for application, as recommended elsewhere in this report. More generally, the discussions within the Group have the merit to show that more co-ordination is needed in some areas that are likely to remain neglected unless further action is taken. The transfer of best practice (or, simply, good practice) for the management of the programmes is one of such areas. A specific example of good practice deserving dissemination is the impact assessment that Growth follows as a set routine. The other critical area concerns the measurement of the performance of FP5 and its predecessors in terms of exploitation and innovation. Both areas are worthy of more attention. It would be a paradox if the Commission, while recommending member states and regions to “implement periodic target-setting, monitoring, evaluation and peer review”³ of their innovation policies, should fail to do so properly in its research programme, to date its major innovation policy initiative.

3.5 INNOVATION POLICY

Innovation and SMEs investigates a variety of themes related to innovation policy and benchmarks national and regional innovation policies. The programme contributed to the debate that led the European Council of Lisbon (March 2000) to highlight the importance of innovation in its conclusions. The most recent achievement of the programme in this area is the Commission Communication on Innovation⁴ and the annexed “European Innovation Scoreboard”.

Innovation and SMEs also carries out a number of “pilot actions” addressing three of the priority areas that the programme itself and its predecessors have identified for innovation policy at the European level, namely innovation financing, intellectual property rights (IPRs) and the setting-up of innovative firms. In 2000 the programme has launched two calls for projects in the area of innovation financing and IPRs. These projects will join the four thematic networks and 24 projects that were launched in 1999 and are now known under the acronym PAXIS (Pilot Action of eXcellence on Innovative Start-ups).

With the overall goal of “enhancing the analytical capacity to review innovation policy and performance”, 11 studies supported by the programme were completed in 2000 and 9 studies are slated for completion in 2001. These studies (some of them may be directly downloaded from the web and others are sent on request) are contracted “top-down” on the basis of calls for tender, cover different aspects of innovation policy and may be regarded both as a “back-room” support to the workings of the programme and as analytical contributions to debate and policy-making across the EU.

The Commission Communication on Innovation reviews the innovation performances in the Union and sets broad policy lines to improve such performances, which are shown in many cases to be uneven across the Union and unsatisfactory, compared to the USA. In doing so, the Communication builds on the Green Paper on Innovation and the Innovation Action Plan, two

³ COM(2000)567, page 17.

⁴ “Innovation in a knowledge driven economy”, COM(2000)567, 20 September 2000.

documents produced under FP4 by the programme's predecessor. The European Innovation Scoreboard, which was mandated by the Lisbon Council, provides essential background information to the Communication, and more generally, to European innovation policies. The Scoreboard builds on other work of the programme, especially the "Trend Chart on Innovation in Europe" and the "Community Innovation Surveys" made in co-operation with Eurostat.

This first Scoreboard exercise needs further refinement. Its indicators are not equally meaningful, the quality of data is not uniform, and there is a lack of dynamic indicators (i.e. indicators capable to track performance over time). There is especially a need to strengthen the base of data drawn from the Community Innovation Surveys, which should receive continuing attention and more resources. But despite these weaknesses the Scoreboard deserves continuation, since it fulfils a commitment to benchmark national and regional policies that should remain high on the agenda of the Commission.

In July 2000, the programme launched a call for proposals on "access to private innovation financing and tools for better knowledge exploitation". As a result of this call, four thematic networks will be set up to exchange information, experience and best practice among organisations and individuals, which have interest in private financing of innovation from different angles. Another call, launched in December 2000⁵, will support pilot actions to exchange experience and best practice between National Patent Offices and other parties interested in raising the awareness of intellectual property among innovators.

Pilot actions may be regarded as experiments aimed at future replication. This might take the form of operations on a large-scale continuation without Commission support (or with limited support), transfer to national or regional authorities, adoption into other parts of the Commission, etc. In practice, pilot actions often tend to go unnoticed outside of their birthplace in the Commission and their replication is hampered by a number of barriers both internal and external to the Commission. Pilot actions are also inclined to outlive their usefulness as experiments. In a positive deviation from the past, the programme is trying to provide built-in guarantees against such weaknesses in the form of accompanying measures, so that results are examined, and if possible used. Two elements of concern for the future may be the fact that management attention and programme money are being diluted on a large number of "low-intensity" projects and that width of coverage may sometimes be achieved only at the expense of project quality. More specifically, it should be noted that one of the networks that is being set up following July's call will require substantial reworking during negotiation and, presumably, constant management attention later. In the same call, there was also the case of a proposal for accompanying measures that had no competitors and was therefore selected despite the amount of reengineering that will be required for the necessary reorientation and improvements.⁶

3.6 COMMUNICATION AND AWARENESS

⁵ Call for proposal for indirect RTD actions INN/00/04 of 15/12/2000. The call also covers the IPR and LIFT helpdesks (for more on these, see the section "Networks and Services" of this report).

⁶ These comments on July's call are drawn from the information submitted to the programme committee meeting of 8/11/00.

CORDIS is the electronic publishing and communication service for all research programmes within FP5. The principal aims of CORDIS are to encourage and to facilitate participation in European research and promote the exploitation of its results.

In addition to on-line information, printed publications are also available: Innovation and Technology Transfer (40.000 copies), CORDIS Focus (38.000 copies), Euroabstracts (13.000 copies).

The Communication and awareness Unit also provides logistics for conferences and exhibitions organised by the Innovation Directorate and manages the Innovation Help Desk.

The year 2000 was marked by the new design of the CORDIS home page and the associated improvement of browsing and navigation capabilities.

Two new on-line services were proposed: the European Innovation Information System, and the Technology Market Place, a meeting place for researchers, technology developers and potential users.

An external monitoring survey among CORDIS users was carried out enabling the validation of new CORDIS services based on user feedback.

Year 2000 statistics show a sharp increase in use: for instance 130,000 downloaded documents per month representing 80% annual growth.

The Unit provided logistics for 3 important conferences in 2000 (Helsinki, Lyon, Sofia Antipolis) and 4 exhibitions (Brussels, Bologna, Oporto, Lyon)

The key issue for CORDIS is improving the efficiency of data management and update in spite of an increasing information flow, which is consuming important resources. Efficient co-operation with the other programmes is also required for improving the update and accuracy of information and to ensure quick deletion of obsolete information.

In order to improve the efficiency of CORDIS and meet services as well as users growth, a significant evolution is required, which is handicapped by the age of the present software architecture (10 years old system). To this aim, a new call for tender is in preparation for launching in 2001. The difficult challenge is mainly to ensure a smooth migration of the system.

CORDIS publications are of high quality, but appear to lack reader's feedback and confirmation of continuous reader interest.

Two services provided by CORDIS deserve special attention: TMP and ERGO.

The Technology Market Place (TMP) aims at bringing EU research results to the market place. The pilot version launched in February 2000 presents limited functionalities and would not be suitable to pave the way for full implementation. Expectations for the new TMP are high. However, the procurement procedure, which must follow a sequence of compulsory tasks (calls, feasibility study, implementation,...), would take no less than 36 months. This raises the issue of the compatibility of such procedure with the real world time scale.

The European Research Gateways on Line (ERGO) is a legacy from FP4 and is also specifically addressed in the work programme of FP5. The pilot phase completed in September 1999 met the target set, but was not completely satisfactory with respect to participation. Fully fledged implementation was proposed to the programme committee in 2000, backed by the assumption that ERGO would fit into the new European Research Area (ERA). At present, the programme committee has yet to decide whether to maintain a low level service until the results of the feasibility study on ERA networking are known, or close ERGO down.

3.7 NETWORKS AND SERVICES

In the Call for regional activities, 62 proposals were received (30 concerned IRE with a total EC-contribution requested of 15,116,404 €, 32 concerned RIS-NAC with a total contribution requested of € 12,538,563). 30 proposals were negotiated with a total of 300 organisations participating. The amount of EC contribution requested was € 7,047,089 (IRE) and € 6,515,534 (RIS-NAC). Total budget available was 13,25 M€.

The basic responsibilities of the Networks and Services Unit are IRC's, IPR Helpdesk and LIFT, management of JRC patent portfolio as well as regional innovation activities. Accession countries are also targeted, as they often lack the capacity to formulate regional innovation strategies and provide innovation support services.

The extension of the IRC's to Accession countries is a long-term project. A problem may occur because of the vast difference between best and worst IRC. The problem, which has substantial effect on the speed of development in the accession regions, can only be solved if appropriate measures are undertaken to bridge the gap between the best and worst IRCs.

Specific measures for closing the gap between IRCs in accession countries and others may include exchange of personnel, improving know how transfer through seminars, teaching and training and consultancy.

For all IRCs a communication umbrella has been developed as a measure to improve communication and efficiency between the IRCs and their users.

The IPR helpdesk has at present achieved good results in terms of users' acceptance. The information sources contain valuable know how on the IPR problems of the user community. However, it lacks a legal online-consultancy. It is a general problem that the legal framework in the European Union is not yet fit for the full range of IPR problems in the information society, i.e., property rights in multimedia documents. It seems inevitable that some efforts must be made to improve the professional performance of the Helpdesks with respect to legal issues and online-support of IPR negotiations for Consortia before contract signing.

4 MAJOR TRENDS, CONCLUSIONS AND RECOMMENDATIONS

4.1 MAJOR TRENDS AND CONCLUSIONS

The monitoring of Innovation and SMEs for the year 2000 showed that good progress has been made in many parts of the programme. Innovative results were achieved in many activities and projects carried out by the consortia and disseminated by the Commission with support of 1999 monitoring recommendations. Following its terms of reference, the panel focussed on four main issues:

- 1) implementation and progress including participation of Accession Countries;
- 2) significant results, preliminary evidence of impact and European Added Value;
- 3) contribution to the issues of the European Research Area (ERA);
- 4) follow-up of recommendations from the previous monitoring exercises and recommendations for 2001.

The programme has given a good contribution to the debate on research and innovation in Europe. Its work is reflected in the communication “Innovation in a knowledge-driven economy” and in the two communications on ERA which were adopted by the Commission in 2000. The recent Commission’s proposal concerning FP6 (February 2001) is also evidence of the role of Innovation and SMEs in European policy making.

Innovation and SMEs is also in the front line of participation of Accession Countries. In 2000 the programme has completed the selection of 67 Innovation Relay Centres (IRCs). This extends the scope of the IRCs, a decentralised network advising SMEs on transnational technology transfer, to include Accession Countries.

Finally, it is worth mentioning that the Commission has taken concrete action on most, although not all, of the recommendations from the previous monitoring exercise.

While appreciating the results that have been achieved, the monitoring panel perceives some cause for concern, and recommends a number of specific action points for improvement.

The main areas of concern, which are common to Innovation and SMEs and the thematic programmes, relate to the undertaking of an exceedingly wide range of commitments, the complexity of internal regulations and rigidity of procedures, the danger posed by the provision of activities for SMEs separate from those for large firms and the somewhat weak connection between the FP and the world of venture capital, which could be improved.

Many actions are being launched, but the ambitions should be more closely related to the staff available. Otherwise there is a risk that projects are not properly managed, lessons are not duly learned, and exploitation of results from past projects is neglected in favour of new activities.

Clearly defined procedures are certainly a necessity in order to ensure transparency and avoid negative effects, such as loss of control. However, the present arrangement is so complicated and inflexible that there is a substantial “administration overhead” that affects negatively the quality of Commission’s action. Firstly administration costs reduce the money available for operating expenditure. More important than that, the time spent on complying with internal procedures reduces the time available for effective supervision and contract management on the part of the Commission. It also adds further work to project co-ordinators. Effective management should prioritise quality of results over compliance with administrative

procedures. Finally, it is unlikely that the time between submission and contract negotiation will be reduced under the present administrative arrangements.

The provision of measures specifically designed for SMEs may make the Commission overlook the synergy effects that might be achieved by consortia which join large firms with SMEs. The resources and access to know-how available from large industrial labs are a potential benefit for the technical proficiency of SMEs. The opportunities for the establishment of lasting business links between large firms, SMEs and universities should not be overlooked.

The effectiveness of the thematic programmes could be increased by a close co-ordination with the activities of the European Investment Bank. Further, the development of a new methodology on how to use Commission funding for supporting SMEs on financing innovations should be encouraged. The latter will of course require a reconciliation of the principle of accountability with the opportunities and inherent risks of an alternative funding approach.

4.2 RECOMMENDATIONS

The following specific recommendations to the Commission are drawn from the general comments of the previous section. These recommendations are equally urgent and should be acted upon within the lifetime of FP5.

- 1 The Co-ordination Group between the innovation cells shows clear structural weaknesses (no budget, no clear line of hierarchy involved). In the face of this the Commission should take action to improve the effectiveness of the Co-ordination Group as a place where good practice is transferred across programmes.
- 2 There is a substantial quality gap between the IRCs based in Member States and those set up in the Accession Countries as a result of the recent extension of the network. Measures such as the exchange of personnel, transfer of know-how by teaching and training, consultancy for the establishment of efficient structures in the Accession Countries seem to be a necessity for closing the gap.
- 3 The Commission has just completed the launch of a wide-ranging set of projects to provide SMEs with economic and technological intelligence by means of consultants and intermediary organisations acting as knowledge brokers. To make good use of the money spent on such activities, the Commission should launch actions to measure, assess and, if needed, increase the impact of such projects on their final beneficiaries.
- 4 The Commission should collect more detailed statistical figures and indicators on the participation of SMEs in FP5 and on the structure of the relevant consortia, including the presence of global players. This would be helpful in setting the strategic baseline of future programmes as well as in implementing their activities. This would also help to measure the success of innovation policy initiatives in terms of their effect on SMEs. Finally, this would give the evidence for synergy effects between SMEs and large companies in R&D and marketing of products.

- 5 There is a need to shorten the updating cycle of CORDIS and improve the quality of some of its services, such as project partners and project results. This would require the development of interactive facilities for the collection of data, as well as the implementation of data mining and other activities to learn more about users' preferences.
- 6 The current Technology Market Place is basically an information base with a limited number of project results; although promising, this pilot version is not yet fulfilling any commercial purpose. It is recommended that plans be made to bring the Technology Market Place to the latest stage of on-line services (e.g., auction and brokerage models) with the explicit objective of commercialising the outcomes of EU funded projects.
- 7 Two new specific rules for encouraging SME participation should be considered:
 - a) provided that a contract is eventually signed, project costs incurred in the period between the time when a positive proposal evaluation is received and the contract is signed should be reimbursed;
 - b) give SME start-ups with insufficient capital the option to take part in the projects, provided that they accept to be paid according to deliverables. This might also help improve the quality of work-plans.
- 8 In order to increase effectiveness of SME innovation financing, a close co-ordination between the activities of the Commission and the Innovation 2000 Initiative carried out by the European Investment Bank is recommended.
- 9 Further actions should be taken to encourage SMEs to protect IPR developed under EU contracts. The guidelines for the project TIP should be reviewed in order to confirm its viability as a mean for keeping track of and promotion exploitation. For the SMEs, the relevant part of the TIP should be considered as an application for future funding for IPR protection after completion of the original project, and covering the same time period as the TIP. At the end of this time period the SME involved should be allowed to claim the approved extra IPR cost based upon this documentation. The aim should be to make to make the IPR costs for European SMEs equal to the costs for US SME's.
- 10 In order to improve the quality of the Innovation Scoreboard, there is a need to strengthen the base of data drawn from the Community Innovation Surveys, which should receive continuing attention and more resources.

The Monitoring Report 2000 is approved and signed on April 8th, 2001 by

Jean-Pierre Chassetuillier

Jorgen Lundsgaard

Giorgio Tuninetti

Karin Anstoetz, Rapporteur

PART B:

**Responses of the Programme Management to the
external Monitoring Report**

Responses of the Programme Management to the recommendations of the Monitoring Panel

The Commission services would like to thank all members of the 2000 Monitoring Panels for their dedicated work and the efforts invested in this complex task. Some of the recommendations included in the monitoring reports address issues of relevance to all Specific programmes. Such issues are discussed from the Framework Programme viewpoint in the responses to the recommendations of the Framework Programme.

The following comments represent the responses of the relevant Directorates General to the recommendations regarding the specific programme *Promotion of Innovation and Encouragement of Participation of SMEs*.

	Recommendation	Commission Services' Response	Target date for implementation / progress
1	The Co-ordination Group between the innovation cells shows clear structural weaknesses (no budget, no clear line of hierarchy involved). In the face of this the Commission should take action to improve the effectiveness of the Co-ordination Group as a place where good practice is transferred across programmes.	<p>The Services will strive to enhance the operational aspects of the Innovation Co-ordination Group.</p> <p>In particular, since we are mid-way through the execution of the fifth Framework Programme, a greater number of good practice examples are now being identified because</p> <ul style="list-style-type: none"> a) projects have started producing visible results, b) assessment activities and collection of information are under way and c) the Programme management and operations are building-up innovation-specific experience. <p>The Services are taking note of the need to enhance the resources available for Innovation Co-ordination Activities.</p>	On-going activities

	Recommendation	Commission Services' Response	Target date for implementation / progress
2	<p>There is a substantial quality gap between the IRCs based in Member States and those set up in the Accession Countries as a result of the recent extension of the network. Measures such as the exchange of personnel, transfer of know-how by teaching and training, consultancy for the establishment of efficient structures in the Accession Countries seem to be a necessity for closing the gap</p>	<p>The Commission is well aware of the weaknesses of certain organisations from the Accession Countries (AC) to provide high quality IRC services. In order to fill this gap, even since the previous, pilot phase of FEMIRCs (Fellow Members to the Innovation Relay Centres), operated in CEECs between 1997 and 2000, the Commission had taken appropriate measures, the most important among them having been the so called "twinning" scheme, through which each CEEC FEMIRC was linked during the whole duration of the project to one MS IRC to get the necessary assistance and training for its operation.</p> <p>During the current phase, where full extension to AC has taken place, the Commission has been taking further, on-the-job and day-to-day measures, as continuous induction training for new IRC staff and staff exchanges, while it facilitates through contractual provisions networking and joint events. IRC-Central Unit experts have made several missions to AC to support the local IRCs. In addition to this, many "old" IRCs, based also to the previous FEMIRC experience, have themselves established preferential links with AC IRCs, facilitating their participation in technology brokerage and other events they have been organising.</p>	On-going activities

	Recommendation	Commission Services' Response	Target date for implementation / progress
3	<p>The Commission has just completed the launch of a wide-ranging set of projects to provide SMEs with economic and technological intelligence by means of consultants and intermediary organisations acting as knowledge brokers. To make good use of the money spent on such activities, the Commission should launch actions to measure, assess and, if needed, increase the impact of such projects on their final beneficiaries.</p>	<p>The need for Economic and Technological Intelligence Actions to ultimately benefit SMEs is a key evaluation criteria written in the call for proposals and evaluation guidelines. All the 53 projects selected have indicated in their contracts, amongst specific deliverables, the number of SMEs they will inform, audit and eventually involve in transnational research or innovation projects. Together, these projects should ultimately inform some 300.000 SMEs, 25.000 will benefit from technological audits and more than 2.000 SMEs should be involved in partnerships for joint research projects to be submitted under the fifth Framework Programme, but also for other type of actions such as technology transfer, quality certification, exchange of personnel...</p> <p>Intermediary progress reports will allow close monitoring and assessment of the ultimate impact on SMEs during the course of the project.</p> <p>At the end of 2002, after closing of the fifth Framework Programme, a review of the final reports will be made by an independent outside contractor to produce a first report on how Economic and Technological Intelligence Actions in the fifth Framework Programme affected European SMEs. It is foreseen to repeat this exercise in 2005 and 2008 to then monitor the real impact of ETI on the competitiveness of the SMEs involved.</p>	<p>Intermediary report January 2002, First impact report January 2003, follow-on impact reports 2005 and 2008.</p>

	Recommendation	Commission Services' Response	Target date for implementation / progress
4	The Commission should collect more detailed statistical figures and indicators on the participation of SMEs in the fifth Framework Programme and on the structure of the relevant consortia, including the presence of global players. This would be helpful in setting the strategic baseline of future programmes as well as in implementing their activities. This would also help to measure the success of innovation policy initiatives in terms of their effect on SMEs. Finally, this would give the evidence for synergy effects between SMEs and large companies in R&D and marketing of products.	<p>A standard set of data and indicators is used for monitoring participation of SMEs in the fifth Framework Programme (Number and origin of submissions and selected projects, Participation by programme and countries...). These are regularly updated and were used to provide the monitoring panel with updated information on SME participation in the fifth Framework Programme in 2000.</p> <p>Like it was done for the fourth Framework Programme (Cfr. "SME participation in Framework Programme 4" at http://www.cordis.lu/sme/src/surv.htm), an independent external contractor is preparing a much more in depth quantitative and qualitative review of SME participation in the fifth Framework Programme, at mid-term. This will comprise a detailed statistical analysis of SME participation and gather opinions of participants on key participation modalities such as information and assistance for participating, submission and evaluation procedures, contractual rules and benefits expected.</p>	Collection of statistics on SMEs: mid-term report September 2001, final report August 2003.
5	There is a need to shorten the updating cycle of CORDIS and improve the quality of some of its services, such as project partners and project results. This would require the development of interactive facilities for the collection of data, as well as the implementation of data mining and other activities to learn more about users' preferences.	<p>The year 2000 has seen implementation and planning of several important features/services. In relation to "External Monitoring and User Feed Back", the plans of the Commission Services go beyond a one-off action. A new service on a permanent basis and fully independent from the CORDIS contractor is foreseen. This will allow the collection of information regarding performance parameters of the service (CORDIS) and direct comments from users which will be used for conceptual upgrades of the service. This new service is therefore also meant to overcome, the correctly stated "lack of reader's feed back".</p> <p>Regarding the aspect of content management and quality, there is a clear need for a dynamic content management system. This is planned for 2001/2002 and will allow a direct information provision on-line, hence leading to a more rapid updating of information but also an improved handling (checking/formatting/value adding).</p>	Continuous activities to improve the CORDIS services. Dynamic content management system 2001-2002

	Recommendation	Commission Services' Response	Target date for implementation / progress
6	The current Technology Market Place is basically an information base with a limited number of project results; although promising, this pilot version is not yet fulfilling any commercial purpose. It is recommended that plans be made to bring the Technology Market Place to the latest stage of on-line services (e.g., auction and brokerage models) with the explicit objective to commercialise the outcome of EU funded projects.	The Commission Services are currently studying carefully this subject	Call for tenders to be launched before the end of 2002.
7	Two new specific rules for encouraging SME participation should be considered: <ol style="list-style-type: none"> 1. allow reimbursement if a contract is obtained of project cost for work done in the period between the time when a positive proposal evaluation is received and the contract is signed; 2. give SME start-ups with insufficient capital the option to take part in the projects, provided that they accept to be paid according to deliverables. This might also help improve the quality of work-plans. 	<ol style="list-style-type: none"> 1. This rule was, up until now, forbidden by general financial rules for Commission contracts, on which the rules for participating in the fifth Framework Programme were based. These rules are currently being revised in view of the next Framework Programme and, in this context, it is considered to allow more flexibility as regards starting of work done under selected projects. 2. The current rules for participation for shared-cost projects do not foresee the possibility of paying partners on deliverables. Such possibility is suggested in the Commission proposal for the next Framework Programme. In the fifth Framework Programme, start-ups with insufficient capital can participate in shared-cost projects provided they either: can provide guarantees for the advance payment they receive from the Community or opt to waive this advance payment and accept to be reimbursed of the expenses incurred to undertake the research projects after each year. 	Rules for participation under review in view of the next Framework Programme (2001-2002).
8	In order to increase effectiveness of SME innovation financing, a close co-ordination between the activities of the Commission and the Innovation 2000 Initiative carried out by the European Investment Bank is recommended.	The recommendation of the Panel is well received. All efforts are deployed to increase links with the European Investment Bank (EIB). An agreement was concluded between the Commission and EIB in spring 2001. Further initiatives are planned in 2001 and 2002 to enhance co-operation.	EIB- Commission agreement spring 2001 (done) On-going activities 2001-2002

	Recommendation	Commission Services' Response	Target date for implementation / progress
9	Further actions should be taken to encourage SMEs to protect IPR developed under EU contracts. The guidelines for the project TIP should be reviewed in order to confirm its viability as a mean for exploitation promotion and track keeping. For the SMEs, the relevant part of the TIP should be considered as an application for future funding for IPR protection after completion of the original project, and covering the same time period as the TIP. At the end of this time period the SME involved should be allowed to claim the approved extra IPR cost upon documentation. The aim should be to make to make the IPR costs for European SMEs equal to the costs for US SME's	<p>The TIP for the fifth Framework Programme has been under partial revision during the first quarter of 2001 and a software tool is under preparation in order to improve the way data is collected from contractors and eventually published for public dissemination on CORDIS. This is expected to facilitate the dissemination of the public part of information given in the TIP and thus to increase the possibilities for project result exploitation. However, it is noted that many organisations, and in particular SMEs, are rather sensitive about public disclosure of details of their work and the dissemination of information cannot go against their commercial interests.</p> <p>Concerning the proposal for covering the IPR costs after the completion of the project, the Services will study this possibility within the framework of the each Thematic Programme timetable and duration and validity of financial commitments.</p>	<p>TIP revision completed in spring 2001. New software tool by July 2001 (e-TIP). e-TIP operational after tests by end of February 2002.</p> <p>On-going activities</p>
10	In order to improve the quality of the Innovation Scoreboard, there is a need to strengthen the base of data drawn from the Community Innovation Surveys, which should receive continuing attention and more resources.	<p>The third Community Innovation Surveys will be launched in 2001 - and the first results are expected in 2002.</p> <p>But the current periodicity of the survey, every 4 years, should be improved. Commission Services and Member States have set up a working group to study the feasibility of increasing the frequency of the survey.</p>	On-going activities.