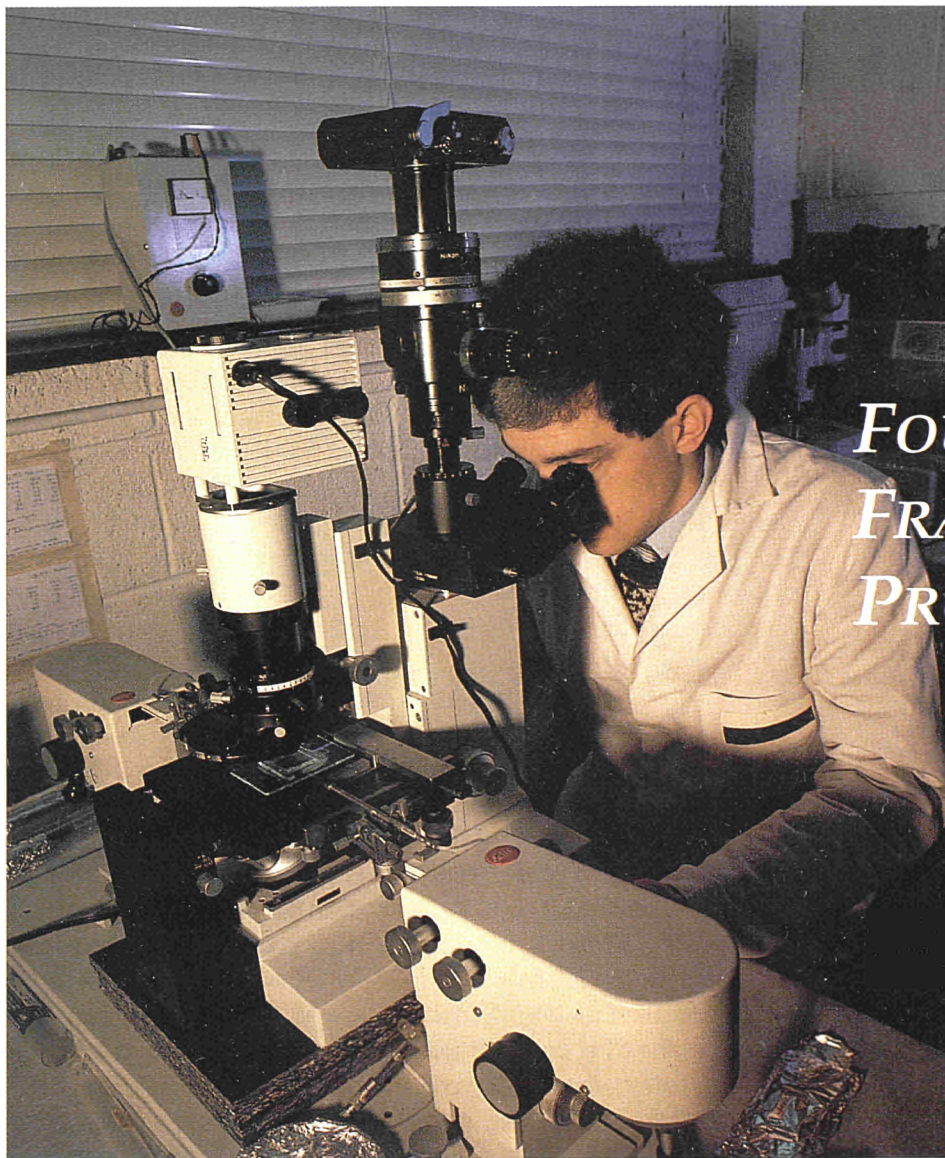


Innovation+ Technology Transfer

2/93

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*IMPACT 2 WORK PROGRAMME
SPRINT ACTIVITIES
AGRO-INDUSTRIAL PROGRAMMES
RESULTS OF COMMUNITY R&D
ONGOING DEVELOPMENTS
PUBLICATIONS – CONFERENCES*



DG XIII-D

Directorate for Dissemination
and Exploitation of RTD Results,
Technology Transfer and Innovation

*FOURTH
FRAMEWORK
PROGRAMME*



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**CREATING
THE CONDITIONS
FOR THE TAKE-UP
OF NEW TECHNOLOGIES**

The Commission's new guidelines for the Fourth Framework Programme for Research and Technological Development, described on these pages, attribute a key role to the dissemination and utilisation of research and technological development (RTD) results. This work, the guidelines propose, will make up one of the four activity headings into which the Fourth Framework Programme will be divided. The guidelines envisage that dissemination and utilisation work should embrace four areas:

- the European infrastructure for publicising the Community's RTD activities, promoting scientific and technical cooperation, and facilitating the application of research results, paying particular attention to transnational utilisation of the results and to the needs of SMEs,
- activities aimed at developing the European infrastructure for the transfer of technologies, by improving innovation support services and the take-up of new technologies by industry, especially SMEs,
- improvement of the European environment for funding technology transfer - among various measures proposed is the establishment of a fund for technology take-up by SMEs,
- the Joint Research Centre's scientific and technical support for Community policies.

The concept of European infrastructures clearly figures prominently in the guidelines. A number already exist, as readers of *Innovation and Technology Transfer* will be well aware: the Community Research and Development Information Service (CORDIS), the network of VALUE Relay Centres, the network of organisations for the promotion of new energy technologies (OPETs), and various networks set up by SPRINT. The guidelines see such infrastructures being strengthened, and expanded where appropriate, and new infrastructures established to fulfil new needs.

A Research Council meeting on 29 April reacted in a generally positive way to the Commission's document. The next step, under way as this issue of *Innovation and Technology Transfer* goes to press, is for the Commission to prepare a new consolidated document in the form of a proposal for a Council Decision on the Fourth Framework Programme. This will be followed by three-party discussions involving the Commission, European Parliament, and Council.

The question of when the Fourth Framework Programme might be approved is difficult to predict with any certainty. Much depends on ratification of the Maastricht Treaty, since the methods of adoption of RTD framework programmes differ according to whether existing procedures or the procedures included in "Maastricht" have to be followed. Another factor is that there will be elections for the European Parliament in June 1994. The Commission will endeavour to have the Fourth Framework Programme, and possibly the first of the specific programmes, adopted before the election campaign begins.

The April Research Council also welcomed a series of proposals put forward by the Commission with a view to improving the way the specific research programmes are operated and managed. For example, it is suggested that calls for proposals should be published only on certain fixed dates in the year, which would be known well in advance, and that the objectives of the calls should be more clearly defined.

Dr. A. S. Strub

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*Telecommunications, Information Market and
Exploitation of Research*

Directorate XIII-D

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This article is based on a press release issued by the Commission on 22 April 1993.

A Research Policy for Growth

On 21 April 1993 the Commission adopted its guidelines for the Fourth Community RTD Framework Programme which will cover 1994-98.

According to Mr. Ruberti, Commissioner in charge of research, "Research can and must play a vital role in promoting growth and improving the quality of life in the Community by increasing knowledge and skills and by virtue of its economic spin-offs".

Community research has suffered from the fragmentation of the national research policies of the Community Member States. Compared with its competitors, Community research has been underfunded. In 1991 for example the United States and Japan committed 2.8% and 3% respectively of their GDP to research, while the figure for the Community was only 2% of GDP. The Community's relative position is likely to get even worse in years to come since a major increase in research funding is expected in the United States and Japan.

To make the most of the available resources and maximise the benefits of Community research activity, the Fourth Framework Programme will be selective in the initiatives it supports and will improve the dissemination and use of research results. Mr Ruberti stressed the overriding aim to establish a genuine Community RTD research policy rather than to developing an RTD programme in addition to Member States' programmes.

This will ensure that the ECU 13.1 billion proposed by the Commission for the Fourth Framework Programme (1994-98) will make a significant contribution to enabling European industry to become more competitive, and to improvement in the quality of life.

Focusing on a Smaller Number of Research Areas

The Commission proposes to focus on a number of sectors and generic technologies with a view to increasing the economic spin-offs resulting from research, and the principle of subsidiarity will be applied to maximise the impact of Community research across regions, sectors and industries.

In addition to industrial technologies, life sciences and technologies will also receive more money, notably biotechnology, biomedicine and health, as well as research needed to reform the common agriculture and rural development policies.

To improve the response of education and training systems to the growing need to improve skills and increase qualifications in Europe, research will be conducted into the education and training needs and methodologies (educational and train-

ing aids, psycho-pedagogical and organisational aspects) in a Europe with an open labour market.

Another new feature of the Fourth Framework Programme is the development of research into transport systems. In order to contribute to the development and management of more efficient and less-polluting transport systems, research will be carried out concerning the complementarity of the various modes of transport, scenarios will be developed and analyses conducted at urban, rural, regional and trans-European level, and the interrelationships between human factors and technology will be explored.

To help raise the level of skills and qualifications in Europe and establish a genuine researcher's Europe, further action will be taken to stimulate the training and mobility of researchers in the Community through the development of a Community system of bursaries and the establishment of networks.

Closer Integration of RTD Activities in Europe

Closer integration of RTD activities carried out in the Community is essential to enable Community research to play a significant role in kick-starting the European Economy. This much is clear from the fact that less than 4% of all public money allocated to research in the Member States is for activities conducted jointly in the framework of Community policy.

Apart from a few rare exceptions, e.g. fusion, where the work of various European laboratories has been properly co-ordinated, and as a result the Community has built up an internationally acknowledged reputation, the co-ordination of research activities in Europe is at present quite inadequate.

To help improve matters, under the Fourth Framework Programme efforts will be made to encourage more concerted action at the highest political level, to take appropriate action to co-ordinate the Member States' participation in major international projects in which only a united Europe can be a partner on equal terms with economic powers such as the United States and Japan, and to help improve the co-ordination of research activities conducted by various European organisations such as ESA, CERN, and ESO. The first step will be for the Commission to intensify its contacts with the various organisations in order to identify suitable areas for such intensive co-operation.

International scientific and technological co-operation, which will now come under the Fourth Framework Programme, will provide greater opportunities for carrying out joint activities of mutual interest in the industrialised countries, Central and Eastern Europe and the developing countries.

Close co-operation will be sought between Community RTD activities and Eureka activities in order to increase their synergetic impact. Community support would concern the

continued on next page

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pre-competitive aspects of activities corresponding to the development of generic technologies.

The Community's Joint Research Centre (JRC) has an important role to play in the context of this dynamic integration process. As it is itself actively engaged in research, and is closely involved in the formulation and implementation of Community policies, it could play the role, in the scientific and technical areas where its competencies lie, of organiser, of focal point for networks bringing together public and private laboratories in the Member States, and could act a centre of gravity for European research consortia in specific areas.

Greater Synergy with the Structural Policies and Better Circulation of Results

There is no point in trying to co-ordinate national and Community policies more effectively unless the Community aims to achieve the harmonious development of its scientific and technological resources. Synergy between RTD policy and the structural policies will therefore be strengthened.

While complying with the principle of excellence, Community RTD activities can make an effective contribution, at little cost, to making good use, for the benefit of the Community as a whole, of the scientific and technological potential of the less favoured regions by networking them with centres of excellence in the most advanced regions.

This synergy between the Structural Funds and research activities will contribute towards a genuine cohesion policy by developing the potential of the regions and relating them to the European Research Area.

To increase the impact of research activities on industry and the ability of companies to translate scientific breakthroughs into economic and commercial successes, activities relating to the dissemination and utilisation of results will be stepped up: expansion of the network of relay centres, wider use and/or establishment of a European infrastructure for the transfer of technology, etc.

Better Information for Better Decisions

To achieve this gradual integration of RTD activities carried out in the Community, it is essential that the decision makers in charge of research policy should first of all be fully abreast of what is happening in Europe and that assessment should be made of the various science and technology policy options (Technology Assessment).

Technology Assessment activities have developed over the past decade at both national and European level, in particular in the context of the various Community programmes and the



Laser Robot system developed under Brite-Euram project to study the welding of an automotive platform

European Parliament STOA (Science and Technology Options Assessment) activities.

Under the Fourth Framework Programme, it is proposed that the various activities being carried out in Europe concerning technology watch, forecasting and assessment of RTD programmes and policies should be brought together in networks. This would provide those involved in Technology Assessment in Europe with a framework for dialogue and for comparing approaches.

Budget

The Fourth Framework Programme will cover the entire range of Community research, technological development and demonstration under four headings (Activities) and will be supported by a total budget for 1994-1998 of ECU 13100 million.

The Four activities will receive the following amounts:

<i>First Activity</i>	<i>ECU 10925 million</i>
RTD and demonstration programmes	
<i>Second Activity</i>	<i>ECU 790 million</i>
Co-operation with third countries and international organisations	
<i>Third Activity</i>	<i>ECU 600 million</i>
Dissemination and utilization of results	
<i>Fourth Activity</i>	<i>ECU 785 million</i>
Stimulation of training and mobility of researchers	

On 3 March 1993, the Commission approved the 1993 work programme for IMPACT 2 (Information Market Policy Actions), the Community's programme for the establishment of an internal information services market, 1991-95.

In the run-up to the mid-term review of this four-year programme, the work programme combines continuity and innovation. In particular, the central strategic theme of 'Info Euro Access', adopted in 1992, reflects the increased emphasis placed on the demand side of the market.

This programme is designed to improve the accessibility of information at the European level for all interested parties. The Commission will act as a catalyst, bringing parties together, providing platforms for discussion and co-operation, co-ordinating action between Member States, stimulating initiatives by market actions and promoting the creation of human networks. A key theme of the programme is the active involvement of all the various participants.

The four IMPACT 2 action lines are the following:

1. The *Information Market Observatory* will continue to pursue its core activities but will direct new activities at improving strategic analysis, increasing interaction with the network of national correspondents and analysing the effects of information use on competitiveness.
2. More stable two-way links will be created between market actors and the *Legal Advisory Board*. New subjects to be addressed will include synergy between the public and private sectors and improvement of the transparency of licensing bodies.
3. Development guidelines will be launched for the new use of standards, the awareness of existing information standards and the promotion of quality assurance standards. In the areas of information awareness, user support and training, in-

itiatives will be decentralised. The *National Awareness Partners Network* and work on European directories will be enhanced. Preparatory work will also begin on postgraduate training of information professionals to become intermediaries and providers of electronic information services.

4. In addition to other activities, the second phase of action on interactive multimedia projects will begin and work will be undertaken on the implementation of the *Euro Info Access* initiative; work will also concentrate on the launch of a geographic information system and on the follow-up to the strategic study on opportunities available to publishers in the information services market.

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A Report from the Foreign Affairs Committee on the consequences of disarmament in Western Europe recommended that the Member States should work with the CIS on a conversion programme for the arms industry.

The Report welcomed the creation in Moscow of the International Science and Technology Centre (in co-operation with the U.S.A. and Japan), which aims to facilitate the retraining of former Soviet nuclear scientists and to promote research into peaceful use of nuclear energy. It was also recommended that this co-operation should be further extended to promote research into renewable sources of energy and to encourage increased contacts between technical institutes and research centres in the east and west.

The Energy Committee recommended the creation of a sectoral programme for aeronautics engineering in the context of the Fourth Framework Programme for Research and Technological Development. RTD results produced by the aeronautics industry are relevant to other industrial sectors while the civil market of the industry is becoming increasingly competitive following defence spending cuts; it is therefore recommended that the Community take steps to ensure that increased collaboration and technology exchanges occur between companies in the industry and in other industries. Areas of co-operation could include fuel and flight efficiency, cost effectiveness (with emphasis on design and maintenance), pollution reduction, improvement of communications and air traffic systems and improved safety.

The Energy Committee also presented a Report on the Commission's proposal to establish a multiannual programme for the development of EC statistics on research and development (with an estimated cost of ECU 400,000 for 1993). It is considered that the compilation of reliable and harmonised data on RTD is crucial for the development of policy in this area.

Transnational Technology Transfer Projects

January 1993 marked the beginning of the implementation phase of 12 specific transnational technology transfer projects. These projects are part of the SPRINT "Specific Projects" action, which aims to spread new technologies throughout the Member States of the European Community, particularly to SMEs, less developed regions and traditional industrial sectors.

The initial call for proposals launched in 1990 attracted 103 project applicants of which 17 were selected to carry out a preliminary definition phase. After presentations in Luxembourg during the Summer of 1992, 12 projects were retained. Examples of the technologies involved are:

- Adaptation and transfer of computer-based fashion design from Italy to Spain and Portugal;
- Contributions from improved leakage-control strategies, developed in the United Kingdom, to more efficient water distribution in Greek towns;
- UK and German techniques for preventive power station maintenance transferred to Spain, Portugal, France, Ireland and Finland.

Each project will run for about two years and it is intended that the results will be presented to a range of companies in different countries. The average Community funding for each project is in the region of ECU 700,000.

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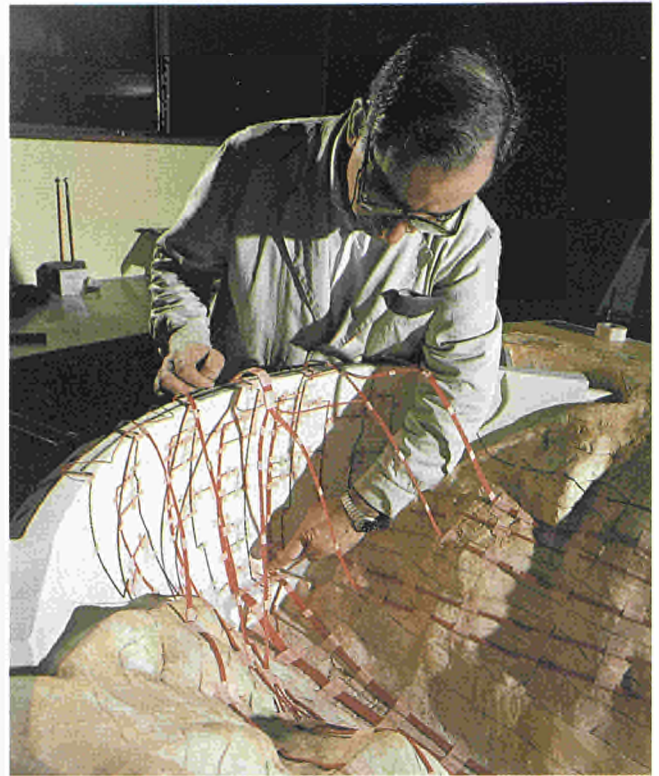
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Sprint: Conference on Research and Technology

On 15-17 November 1993 the Sprint programme will organise a conference on the future role of Research and Technology Organisations (R&TOs) in Europe.

R&TOs is the term used to describe organisations which



National Civil Engineering Laboratory, Italy: Model of testing dam under "Seismer" Project

have a technological capacity and provide one or more of the following technology related services: basic and applied research, technical consultancy, certification and testing, dissemination of technical information, etc to groups of companies either in the same sector (e.g. construction, textiles, wood, etc.) or concerned with the same technology (e.g. laser, welding, robotics, etc.)

R&TOs play a key function in supporting the technological development of European industry. This is specially the case with small and medium-sized enterprises (SMEs) and traditional industry sectors, where few companies are able to maintain significant in-house technology development activities. R&TOs provide this on a collective basis.

The conference will deal with the functions and achievements of these organisations and will identify the future role of R&TOs in innovation and technology transfer in a changing environment where there is growing competition from other organisations (universities, contract research organisations, etc), at a time when their traditional sources of funding are being reconsidered. Participants will discuss their possible options and future strategies as well as the best ways to promote technology development and the diffusion of new technologies to firms. A second aim will be to analyse transnational co-operation between R&TOs and future Commission activities in support of this.

SPRINT has established and supported a number of R&TO networks to encourage transnational European co-operation between them either by undertaking technology transfer projects on subjects of common interest or through common technology dissemination activities.

In this spirit, SPRINT is providing partial financial support

to 48 transnational R&TO projects involving approximately 180 organisations in the Community. These projects cover industrial and technology sectors as varied as shoe manufacturing, welding, the building industry and composite materials, to name but a few.

The conference will provide a framework to exchange information and experiences of practitioners from R&TOs and policy makers in developing measures to improve their performance.

For more information on this event, please contact

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Sprint: Conference on Quality

The European Seminar on Quality Promotion, sponsored by SPRINT, took place on April 27-29 in Aachen.

The Seminar concentrated on critical issues on quality management in SMEs, such as the examination of the quality promotion scene in Europe, identifying the difficulties facing SMEs in keeping pace with developments in quality improvement and developing and proposing a list of initiatives to bring total quality management to SMEs.

Since quality is a crucial factor in growth and success, and even of survival for European SMEs, it is being spearheaded through support agencies and a variety of national and regional schemes and initiatives.

The Aachen Seminar was an activity of the Community Working Group on Quality, set up by SPRINT with a view to promoting the exchange of knowledge in this area, given the increasing use of quality services by SMEs throughout the Community. This Working Group gathers together all the relevant representative organisations established in the Member States and assists the Commission in promoting quality management through seminars, conferences and studies.

One of the objectives of the Aachen Seminar is the evaluation of the role of national and regional Quality Promotional Organisations in fostering quality in European SMEs. These organisations are concerned with general quality management issues and practices as well as with more specific topics such as certification, quality control, non-destructive testing and interpretation of international quality standards. Quality Promotional Organisations provide quality-related services to groups of companies in the same sector or concerned with the same technology.

Other topics covered by the Seminar were:

- the identification of initiatives at a European level to promote quality;
- the establishment of quality standards and certification pro-

cedures;

- education and training;
- current and future trends in total quality management.

Further information from

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Sprint: Public Measures Supporting New Technology Based Firms

A SPRINT seminar on public support of New Technology Based Firms (NTBF) in Member States was held in Luxembourg on 18-19 March, to discuss recent developments in public schemes to support NTBF in the Member States and the US, as well as future Community actions.

This policy forum is the first in a series of workshops in the field of innovation support for firms and technology transfer, launched by the Commission as part of the SPRINT programme. The workshops bring together programme managers, policy and strategy developers and experts in innovation support and technology transfer in order to exchange experience.

The aim of the March workshop was to discuss and identify how public policy can respond to the needs of small firms in general and to NTBFs in particular. Presentations were made on different schemes in the Member States, ranging from direct financial support of NTBFs to indirect support via incentives and favourable conditions for seed and venture capital firms. The most efficient schemes have clearly defined target groups, incentives for complementary or follow-up private capital investments, and are subject to ongoing monitoring and evaluation.

It was demonstrated that public support of NTBFs is effective if there is an organised connection between support structures and initiatives at regional, national and Community level. At present, Community action mainly covers a few experimental schemes on financial support instruments and facilitates transnational business relations for technology firms. It was recommended that the Commission should organise Community action in a more coherent manner in order to achieve synergy.

FUTURE WORKSHOPS

Transfer of Technological Knowledge and Know-how through the Management of Human Resources — 25-26 May

The Clustering of Innovative SMEs — 9-10 September

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Research and Technology Organisations: Strategies for the Future — 15-16 November

Quality Promotion Towards Innovative SMEs — 6-7 December

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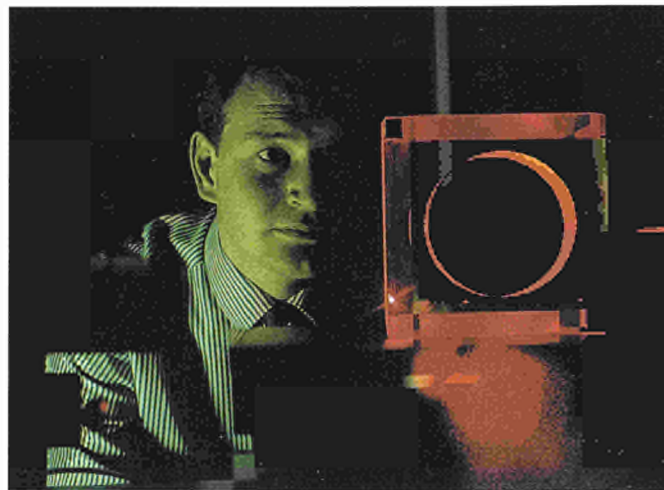
Mint: Helping Companies to Manage the Integration of New Technologies

Managing the Integration of New Technology (MINT) is a new SPRINT action, aimed at promoting the use of new technologies by small and medium-sized enterprises (SMEs) by using experienced consultants in the management of innovation. MINT is a co-ordinated attempt by the Member States and the Community to exchange good practice and share the results of a common approach in creating awareness and stimulating the use of innovation and technology management techniques.

MINT supports short diagnostic consultancy assignments undertaken by experts in the management of innovation as a door opener to introducing appropriate technological change as part of the individual business strategy. The scheme will provide firms with an assessment of their use of technology and the potential for integrating relevant new technology and management techniques (e.g. design, quality, value analysis), as part of overall business development.

Following a short diagnostic analysis of how the firm is, or could be, using and managing technology within the business, the consultant will assist the firm to develop a plan. As a part of the process, training workshops will be run for groups of firms with common business or technology needs. To ensure that there is follow through from the consultancy, MINT will co-operate with regional and national schemes, so that companies can be introduced to other relevant national and Community support programmes.

MINT will be administered and operated in each Member State at national or regional level according to business practice in that specific Member State. This decentralised structure is an important and innovative feature of MINT. Sixteen experienced programme contractors and sub-contractors have been chosen for this task, including ANVAR and APRODI in France, VDI-IT, VDI-ZW and RKW in Germany, ASTER and AIRI in Italy and PERA International in the UK. These bodies will be responsible for selecting, training and monitoring a core group of experts to carry out the individual consultancy assignments. In this way, MINT aims to deliver a common approach tailored to the specific requirements of SMEs in differ-



Optical Fibres
Magneto optic glass in Pirelli labs

ent national or regional business environments. The Commission will ensure harmonisation of procedures through the constant exchange of experience.

The co-ordination of this process at European level was launched at a seminar held in Luxembourg for MINT contractors on 24-25 March, which examined important issues about how to manage and operate the scheme. Substantial agreement was reached about the different steps involved in the scheme's implementation. Eligible companies in each country will be industrial firms with 50 to 250 employees with the resources and technical capacity to benefit significantly from the initiative. A combination of general diffusion and direct promotion will be used to identify target enterprises and there will be a formalised approach to selecting consultants and ensuring quality control.

SPRINT will ensure a standard procedure through a series of quality assurance workshops for the approved experts which will be administered nationally and monitored by the Commission. A Directory of the different technology audit tools and existing procedures which could be applied in the scheme is being compiled.

A second seminar is being planned for November after pilot phases have been undertaken and assessed in each country. About 1000 consultancy assignments are planned for 1993.

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Research in the field of agriculture and agro-industry is catered for by the AIR programme. The current AIR programme – part of the Third Framework Programme – covers agriculture, agro-industry, and fisheries, and also has a high level of biotechnological involvement particularly in the agro-industrial section. The full title for this programme is “A specific programme for research and technological development and demonstration in the field of agriculture and agro-industry, including fisheries (1991-1994)”. The programme was adopted on 23 April 1990 and concerns all of agriculture, horticulture, forestry, fishery, aquaculture, and related food and non-food industries (in particular SMEs) and in this context it can be viewed as an amalgamation and continuation of the agricultural and fisheries related programmes in the Second Framework Programme, notably CAMAR (DG VI), ECLAIR, FLAIR, BIOMASS, FOREST (DG XII), and FAR (DG XIV). The programme is jointly managed by the related research divisions of the three Directorates-General.

The ultimate objective is to contribute to securing a better match between production of land and water-based biological resources and their use by consumers and industry through pre-competitive research, technological development and demonstration (RTD&D).

The programme is divided up into four distinct scientific and technical areas:

1. Primary Production in Agriculture, Horticulture, Forestry, Fisheries and Aquaculture

Work in this area aims to adapt primary production to the quantitative and qualitative demands of the market and to increase the efficiency and international competitiveness of agriculture, horticulture, forestry, fisheries and aquaculture. In all cases proper protection of the environment is sought, associating a global ecosystem approach and economically sustainable development. Particular attention will be given to RTD projects which could contribute to the improvement of socio-economic conditions in regions which are lagging behind in development.

2. Inputs to Agriculture, Horticulture, Forestry, Fisheries and Aquaculture

This area focuses on better control of inputs and the reduction of production costs in primary production, contributing to the protection of the environment and the sustainable exploitation of biological resources. Specific attention is paid to the needs of less-favoured and marginal, rural and coastal areas.

3. Processing of Biological Raw Materials from Agriculture, Horticulture, Forestry, Fisheries and Aquaculture

Here the aim is to provide, through pre-competitive RTD, the basis for environmentally-friendly and economically efficient processes (including transport and storage) for new or improved competitive products in the food and non-food sectors. Whenever appropriate, integrated projects, combining for example food and non-food processing, should be developed.

4. End Use and Products

This area aims to develop a better knowledge of the characteristics, as requested by users and consumers, of final products derived from biological materials (food and non-food, including energy, forest and horticultural products).

The programme is implemented through research and technological development projects, concerted actions, demonstration projects and accompanying measures such as studies, training grants, conferences, and administration costs. Demonstration projects are a relatively new form of action in this area where the Commission funds projects which intend to demonstrate the feasibility of a process to achieve its market potential.

The first Call for Proposals (AIR I) covered all areas of this Programme and was published in the Official Journal on 10 October 1991, with a deadline of 31 January 1992. The Call resulted in 762 proposals with 4,600 participants (average: 6 per proposal; maximum: 78), a total budget of about 1.7 BECU and a total E.C. funding request for 999 MECU. The average total cost of a proposal was 2.2 MECU, including proposals for demonstration projects as well as concerted actions and shared cost R&D projects.

The total budget available for this Call is 130 MECU, of which up to 45 MECU is allocated for Demonstration Projects, leaving 85 MECU for R&D projects (shared cost and concerted actions). There were 102 projects selected, 7 of which are Demonstration Projects with 19 concerted actions and 76 shared cost projects. The 95 shared cost and concerted action projects involve a total budget of 172 MECU and ask for an EC contribution of 85 MECU.

The 102 short-listed proposals have 863 participants: 829 from all Member States, 32 from EFTA States. The private sector is represented by 194 participants, and the public sector with 269 universities and 319 public institutions; 84 institutions are classified as “other”, including 2 international organisations, and 59 “mixed” private and public research institutes. There are 213 participants in Concerted Actions, 85 in Demonstration Projects, 568 in shared cost R&TD projects.

The following is a breakdown of selected projects from AIR I and AIR II according to the relevant scientific sectors of the programme:

<i>Projects</i>	<i>AIR-I</i>	<i>AIR-II</i>
<i>Conversion diversification extensification</i>	8	11
<i>Interaction of agriculture with environment</i>	11	6
<i>Machinery and informatics</i>	–	14
<i>Rural development</i>	4	8
<i>Non-food crops</i>	3	9
<i>Animal health and husbandry</i>	7	17
<i>Crop inputs and physiology</i>	13	28
<i>Forestry and wood processing</i>	14	15
<i>Biomass for energy and non-food processing</i>	5	23
<i>Food processing and end use</i>	12	35
<i>Demonstration (non-food)</i>	7	none
<i>Fisheries and aquaculture</i>	18	34

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The number of projects corresponding to the different sectors of the programme listed for AIR II above are provisional figures in that the final shortlist has yet to be decided. The second AIR call was launched on 1 August 1992. The call resulted in 1017 proposals (914 shared cost projects and 103 concerted actions; no demonstration projects call) with a total of 6500 participants (average 6 per proposal; maximum 48). The total budget was 1.6 BECU with a total request for 1.0 BECU with an average cost per proposal of 1.6 MECU and an EC contribution of 1.0 MECU. A short-list of around 200 proposals are in the process of being selected with a total budget of 330 MECU and an EC contribution of 200 MECU. There are over 1000 participants with 70% of them coming from the public sector (educational and public institutes) and the rest from industry. This result is similar to the first call. Contract negotiations for the proposals selected on the second call will take place once a final short-list is decided. The following table gives a breakdown of some statistics related to the two AIR calls:

PROJECTS	AIR-I	AIR-II
Call for Proposals	10.10.91	01.08.92
Duration (years)	4	4
Number of Projects	102	204
Shared Cost Projects	76	169
Concerted Actions	19	35
Demonstration	7	none
Total Budget (MECU)	172	334
EC Contribution (MECU)	130	170
Number of Participants	863	1050

A third call for this programme is envisaged for the Summer. This will be a limited call for specific topics of the work-plan which have been underfunded in the previous two rounds.

• **ECLAIR and FLAIR**

ECLAIR (European collaborative linkage of agro-industry through research) and FLAIR (Food linked agro-industrial research) are specific programmes from the second framework programme and are primarily concerned with the impact of high technology upon the agro-industrial food and non-food sectors. Biotechnology is involved in up to 70% of the projects and the main objectives of the programmes include improving existing processes, developing new ones, reducing the costs of production and the control of the supply, and introducing new products and functions, in the food and non-food sectors of the agro-industrial market.

For FLAIR and ECLAIR there is generally a broad mix of academic, public institute, and industrial participation (up to 40% on average), and the participation of small or medium enterprises (SMFs) is strongly encouraged. The projects are on average up to four years in duration and are pre-competitive

in nature in that the transfer of technology from the laboratory to the market is the main medium-term objective. The vast majority of these projects are shared-cost type actions in that the Commission puts up 50% of the funding over the duration of the project, and concerted action projects where the Commission pays for the organisation of European networks.

	ECLAIR	FLAIR
Call for Proposals	17.12.88	20.06.89
Duration (years)	5	5
Shared Cost Projects	41	22
Concerted Actions	none	11
Total Budget (MECU)	130	45
EC Contribution (MECU)	63	25
Number of Participants	334	517
Industry	104	80
of which, SMEs	75%	56%
Educational	130	155
Public/Private	100	282

The above table gives a breakdown of some statistics concerning both programmes. Important issues tackled in ECLAIR and FLAIR include the following:

- an understanding of the genetics of lignin, oil, fibre, and carbohydrate crops, with a view to manipulating the content and composition of the lignocellulosic ratio, and the content and quality of oils, carbohydrates, and fibres, in new and conventional crops.
- research into transgenic food and non-food plants which have conferred insect or disease resistance, controlled ripening, and increased yield, transgenic plants expressing proteins or chemicals of interest such as special unsaturated fatty acids, pharmaceuticals etc.
- research into biosensors, diagnostics, vaccines and fertility, for animals, fish, and plant diseases, using biotechnological tools such as in-vitro fertilisation, DNA probes, PCR, and monoclonal antibodies.
- genetic manipulation and utilisation of microorganisms for the improved production of conventional fermented food products and flavours, and for the production of high added value products (bioplastics, chemical commodities) from non-food sources such as surpluses and biowaste.
- development of bioprocesses and biotransformations and related equipment, machinery, and sensors in order to surpass the current limitations set by traditional processes.
- using biotechnology to develop ways to improve the quality, safety, and nutritional benefit of food such as sensors for pathogens, cloned probiotics, transgenic foods, new toxicological tests.
- developing and testing new cooking and food quality equipment and techniques which enhance the flavour, and quality of the final product such as sous-vide, high pressure and microwave cooking, NMR and NIR analysis, and HACCP analysis.

Artificial Intelligence

• EC-Japan research

The international symposium on AIES (Adaptive Intelligent Energy Systems), held in Brussels on 1-2 February 1993 by the European Commission's Directorate-General for Science, Research and Development and two Japanese research institutes, was designed to christen a new industry which associates energy and computing technologies. Despite the relative levelling off of energy needs in several industrialised countries, on a world-wide scale, energy needs are on the up and up. Decision-makers are therefore increasingly aware that investment in improving energy efficiency is more profitable than investing in the search for new energy resources, both from an economic and an environmental viewpoint.

• A new concept

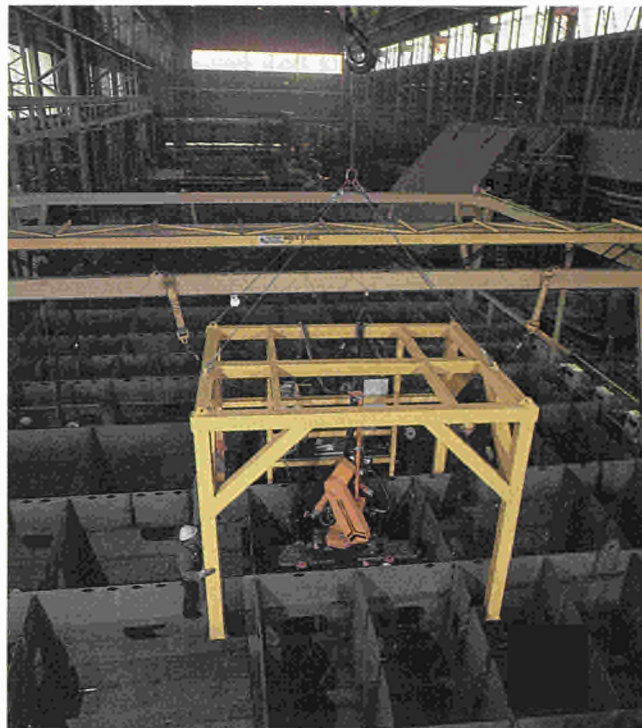
The basic principle of research underlying "Adaptive Intelligent Energy Systems" is "ecotechnology"; that is, a symbiosis of ecology and technology. The models used consist of natural systems which allow for the entropy per unit of biomass to be reduced to a minimum, and for an equilibrium within an ecosystem to be reached spontaneously. AIES can be applied to all areas of production, from the processing industry to electricity generation, from construction to metallurgy. In all cases, they are based on the combined use of neural networks of information, multi-conversion energy systems (which combine different sources of energy) and an integration of all phases of the life cycle into the ecosystem.

In a neural network (NN), the units are connected to each other in the same way as neurones in the human brain, where the "state" or "level of activation" of each neurone depends on stimulation from other units. The level of activation of the first layer of units, called "input units", triggers a certain number of intermediary layers of so-called "hidden units"; they in turn trigger the final layer of "output units". Thus, at each stage, decisions are taken on the basis of a large number of variables, ranging from the effect on the environment to the aesthetic preferences of the designer. Expert Systems (ES) can extrapolate information from their data base and apply it to new situations, using logic rather than a mathematical basis. They can decide to "intervene" to tell the operator of the consequences of a certain choice, suggest another, or remind him that a particular attempt has already been tried unsuccessfully.

• The JRC ahead

Fully AIES buildings or production methods do not yet exist, but research is moving swiftly in that direction and promising precursors already exist.

The European Commission's Joint Research Centre (JRC), for example, has developed a prototype for an artificial intelligence tool - BEAMES (Expert System for Building Energy Auditing). As the name implies, this is a programme for devel-



Odense Shipyards: Automated ship welding

oping software designed to carry out energy audits on buildings.

In future, the majority of important buildings constructed will be equipped with Building Energy Management Systems to control not just their temperature but also such things as their maintenance, automation and internal circulation. For example, the provision of energy can be ensured through the "decentralised co-generation of heat and power" (CHP) in which a photovoltaic system, oil-fired generator and electricity grid combine with and complement each other. This allows energy economies ranging from 30-40% up to as much as 70% in some prototypes.

In order to use the advantages of Building Energy Management Systems for older buildings, the researchers needed to create a flexible instrument. Hence the idea of BEAMES, which the JRC embarked upon in 1990. It was designed to be adapted to a portable computer with CD-ROM for interactive multimedia information. Thanks to its neural network, BEAMES is by far the most effective energy audit method currently in existence and it uses a quasi-automatic procedure of assimilating new technical progress. Rather than developing BEAMES in isolation, the JRC is working as part of an international research network, in which it will be the driving force for the formulation of Community norms and standards.

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Self-Developing Film: A new optic polymer storage film for recording, reading and erasing analogue images

When the project began, there was no polymer system (comparable to the system of magnetic tape used for numeric data) for reading, recording and then erasing stored analogue images. Nor did the necessary hardware (machines) exist, when it came to performing such operations. And yet, for many fields of activity which involve the storage of analogue images (the micro graphic industry in particular), it would be extremely beneficial to do away with photographic film - which requires lengthy and costly chemical development and may only be used once.

• A genuine achievement

Commended at Seville for its achievements (BRITE-EURAM Conference, 25-27 May 1992), the "Erasable Polymeric Media for Analog Information Storage and Retrieval" project set out to develop a new system for recording images by laser.

Simpler than currently available procedures, which are reusable and compatible with digital computer systems, the new and innovative technique uses lasers to induce thermo-optic properties into an extremely thin film of active, liquid crystalline polymers, coated onto a translucent plastic film (substrate) and covered with a second, protective layer. The project also developed electronic equipment for subsequently reading, recording and erasing data on the film, as well as a specific infra-red diode laser designed to control precisely the electromagnetic absorption of the optic polymers.

The scanning system developed was designed to permit

The article "Results of Community R&D" was prepared by MediaScience International - Brussels

hard copies of the data to be made, so that the system could also be used for operations other than systematic storage, while the mechanism for wiping stored information enables the same section of film to be used for recording new data.

• Various applications

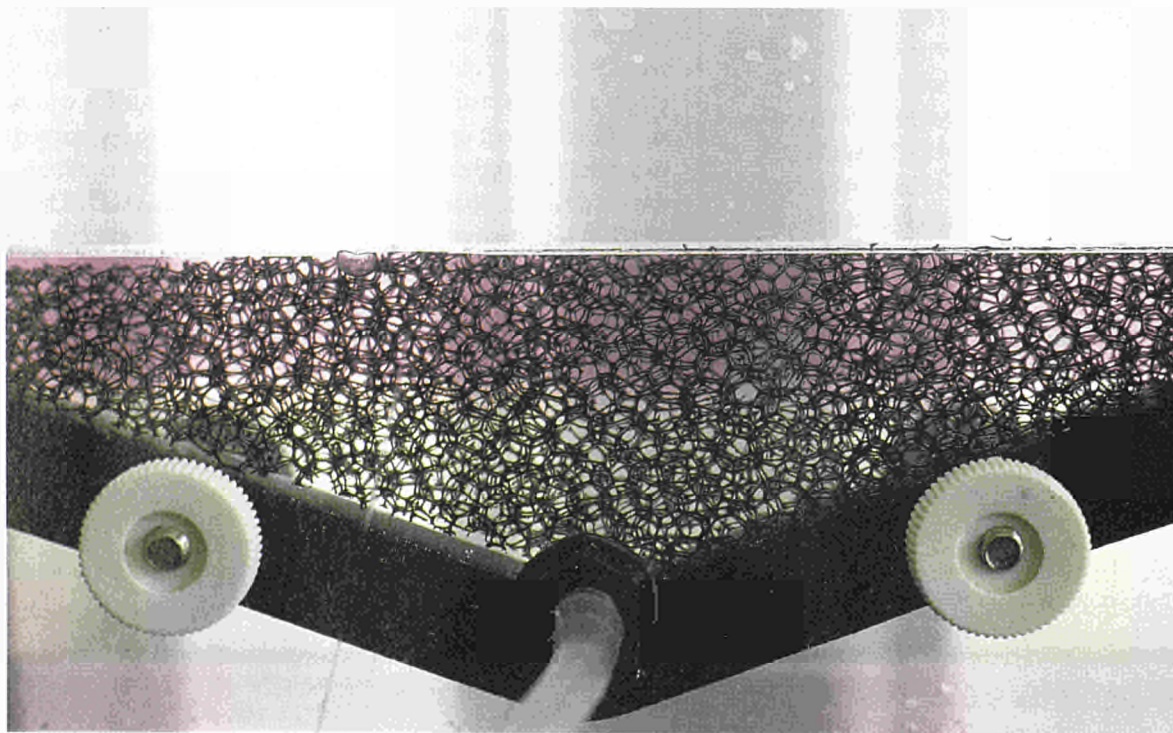
Various types of polymers were developed which allow recording using infra-red solid state lasers. Writing tests on the film show the density of recording energy required is around one nanoJoule per square micrometre ($1 \text{ nJ}/\mu\text{m}^2$).

It is already clear that the notion of "auto-developing film" is technically viable, thanks to the creation of new optic polymers for image storage. While manufacture of the film itself has been successfully concluded, research into recording/erasing techniques has been constrained by the non-existence of appropriate hardware equipment. Attention is currently focusing on rapid scanning systems which will be able to use this new film.

Given the complexity of the technology, it is estimated that industrial applications for it will take two to four years to materialise. That said, the low cost of the diode lasers used and the absence of a physical or chemical recording mechanism indicate that it may be possible to develop appropriate hardware relatively inexpensively.

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*Vrije Universiteit,
 Brussels*

*Pathogenesis of
 human pituitary
 tumours.
 Gradient former
 to prepare SDS-
 PAGE gels allow-
 ing the separa-
 tion of proteins
 according to
 their molecular
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Biotechnological Inventions: Legal Protection Proposal

The Commission has submitted an amended proposal for a Council Directive on the legal protection of biotechnological inventions (COM (92) 589, Official Journal C 44 of 16.2.93).

The text of the original proposal (Official Journal C 10 of 13.10.89) is set out alongside the amended proposal.

Substantial amendments are made to the preamble and to the provisions covering:

- biological material
- compulsory licences
- deposit, access and re-deposit of biological material
- reversal of the burden of proof concerning patented processes.

The final provisions have also been amended.

Science & Technology: Central and Eastern Europe (Copernicus)

A 1992 initiative of the European Parliament provides the financial basis for Co-operation in Science and Technology with Central and Eastern European Countries (COPERNICUS).

The COPERNICUS project, with a total allocation of ECU 55 million, aims to support the rehabilitation of industry and to improve the quality of life in the co-operating countries. These countries include the EC Member States, Albania, Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia.

COPERNICUS covers seven major RTD areas: environment, biomedicine and health, social science, information and communication technologies, materials, agricultural and food industries, and fundamental scientific research, as well as other areas.

In 1992, the Commission issued an initial call for proposals for pilot and preparatory actions covering six action lines, including scientific and technical mobility, pan-European scientific networks, conferences and seminars, joint research projects, participation in the Community's specific research programmes and participation in COST actions. A total of 11,750 proposals were received and following evaluation, funding was recommended for some 3,000 projects.

1992 also saw the launch of a call for co-operation in the field of biomedicine and health. 1600 replies were received. The breakdown is as follows: mobility (850 proposals), networks (50 proposals), conferences and workshops (200 proposals), joint research projects (500 proposals). 28 proposals were short listed for funding, distributed across the target areas of BIOMED (the biomedicine and health RTD programme): administration of medicines (1), risk factors and occupational medicine (1), biomedical technology (6), health services research (2), AIDS (4), cancer (8), mental illness and neurological disease (2), ageing and age-related health problems and handicaps (3), research on biomedical ethics (1).

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Nuclear Safety: Russian Federation and the Ukraine

There is an urgent need for immediate action to improve the security of nuclear power facilities in Russia and the Ukraine, the current state of which are causing grave concern.

The 1991 Community Programme for the former Soviet Union allocated ECU 54 million to improve the safety of operating nuclear power plants and to strengthen the regulatory authorities.

The 1992 Programme allocates ECU 60 million for this purpose; it builds on the 1991 programme and is in line with activities developed under the PHARE nuclear safety programme for Central and Eastern Europe and with the recommendations of the G-7 nations. The provision in the 1993 budget of ECU 20 million brings the overall budget to ECU 80 million.

The Programme aims to improve the safety of operating power plants and other civilian nuclear fuel and waste treatment facilities and to promote regional co-operation on nuclear safety among countries operating Soviet-designed nuclear power facilities.

Plant Operational Safety (ECU 38 million)

- improved organisation and procedures;
- upgrading inspection facilities and procedures;
- improved training and quality assurance.

Design Safety (ECU 20 million)

- assistance to operators and design institutes in assessment of the most important technical problems;
- assistance in the implementation of suitable short and medium-term solutions.

Support to Regulatory Authorities (ECU 10 million)

- development of strong, independent regulatory authorities and technical support organisations charged with the safety

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of the population and the protection of the environment.

Master Plan (ECU 10 million)

- design of a plan to establish a coherent nuclear safety policy framework in the CIS and Central and Eastern Europe for the next four to five years, involving policy recommendations on improved safety measures for all stages of the civilian nuclear fuel cycle;
- the results of the plan will be taken into account in the detailed definition of activities to be implemented under the 1992 programme and will form the basis of the 1993 programme.

Programme Management and Implementation (ECU 2 million)

Council Directive: Scientific Examination of Questions relating to Food

On 25 February 1993, the EC Council adopted a Directive on assistance to the Commission and co-operation by the Member States in the scientific examination of questions relating to food.

Member States must take the necessary measures to enable their competent authorities and bodies to co-operate with the Commission and lend it the assistance it needs in the scientific examination of questions of public interest relating to food and public health.

This co-operation covers disciplines associated with medicine, nutrition, toxicology, biology, hygiene, food technology, biotechnology, new foods and processes, risk assessment techniques, physics and chemistry.

Each Member State must designate the authority or body which will be responsible for co-operation with the Commission and for the distribution of work in appropriate institutes within Member States.

The Member States must introduce the necessary implementing provisions in their national laws before 1 June.

Esarda: Safeguards and Nuclear Material Management Symposium

ESARDA, the European Safeguards Research and Development Association, held its 15th Symposium on 'Safeguards and Nuclear Materials Management', in the Vatican City from 11 to 13 May 1993.

ESARDA is an association of European organisations, including Member State nuclear energy authorities and the European Atomic Energy Community, and was formed to advance and harmonise safety research and development. It also provides a forum for the exchange of information and ideas between nuclear facility operators and safety authorities.

The symposium included presentations from international authorities as well as from safety specialists. Proceedings were published immediately after the Symposium and are available from the organisers.

The programme was as follows:

Day 1: Invited papers; challenges and trends in modern safety; plant-specific experience I and II; measurement techniques I and II (NDA).

Day 2: IAEA session; safeguards in highly automated plants using advanced techniques; material control and accountability; data evaluation technology; measurement techniques III and IV (NDA).

Day 3: Safety concepts and national programmes I and II; containment and surveillance I and II; measurement techniques V (general) and VI (DA).

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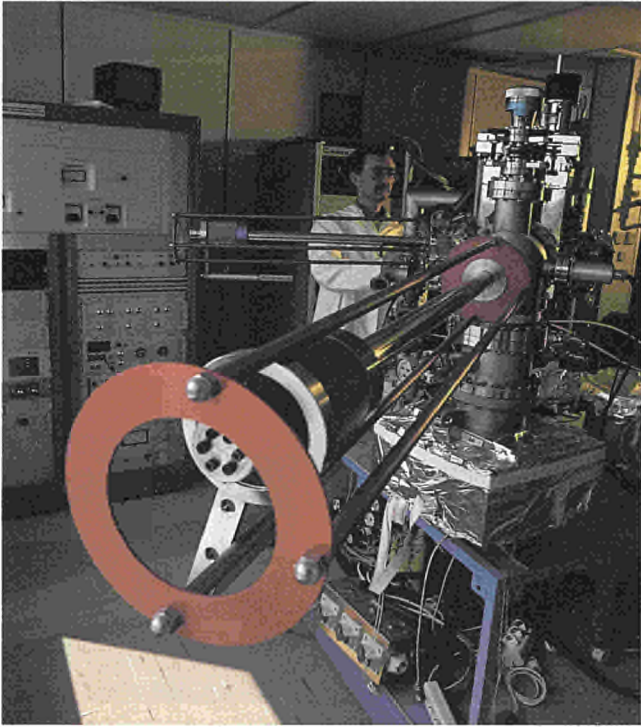
EC/Japan: Co-operation in Electronics

The Commission has launched a pilot programme for closer co-operation between European and Japanese manufacturers of consumer electronics and their components, with a view to improving the competitiveness of the industry in Europe. The project is industry-led and is supported by the Japanese government as well as European and Japanese manufacturers in Europe.

In 1992, the European Association of Consumer Electronics Manufacturers and the Electronics Association of Japan co-operated on a limited test project to assess how the competitiveness of the plastic moulding sub-sector in Europe could be improved for the benefit of users in the consumer electronics industry. This exercise proved to be a great success.

As a result of this the Commission and the Japanese Ministry of International Trade and Industry have offered their support to a proposed extension of this co-operation. The Commission intends to allocate ECU 3 million over a two-year period to support a number of similar projects. The main objective is to assess the potential of this type of co-operation as a model for other industries. Much of the finance provided will be used to encourage the participation of SMEs.

The programme will continue to be industry-led, with indi-



Caen, France: Research on new high TCR superconducting materials

vidual projects being 'self-defined' by the participants and based on the specific needs of the companies and components concerned.

The first project, for which participants have already been identified, will be for certain types of printed circuit boards used by consumer electronics manufacturers and will involve a visit of European suppliers to Japanese companies in June this year. The next step will be to identify priority areas for co-operation and to define collaborative projects in order to improve the competitiveness of the European component infrastructure.

Community Growth Initiative: Implementation

During the lead-up to the Edinburgh Council in December 1992, the Commission presented its ideas for an initiative to promote economic growth in the Community and to reduce unemployment. This formed the basis for the agreement in Edinburgh by the Heads of State and Government on the recovery plan for Europe.

The Commission has published a communication on the specific elements of the Community's contribution to the growth initiative (Official Journal C 60 of 3.3.93). The key elements include:

- the creation of a European Investment Fund to provide guarantees for investments of ECU 15 to 20 billion;
- the raising of the lending ceilings of the European Investment Bank to permit investments of ECU 7 to 10 billion;
- the development of trans-European networks in the transport, energy and telecommunications sectors;

- the creation of a Cohesion Fund and an increase in the Structural Funds;
- the improved development of SMEs through better information and co-operation, promotion of transnational subcontracting and strengthening of technological potential;
- increased training, particularly in the context of workers affected by, or potentially affected by, industrial restructuring, and the promotion of improved training and human resources development;
- the acceleration of measures to improve the effective operation of the internal market, such as more straightforward rules and further work on norms and standards. There will also be efforts to enhance co-operation with industry and improvement in the environment for firms conducting cross-border activities;
- the improved management and efficiency of Community research and development and better training and human resources development in R&D:
 1. Immediate steps will be taken to encourage national organisations to take initiatives in proposing consortia and a small reserve of research funds to finance the pre-competitive part of EUREKA projects will be proposed.
 2. The Commission will increase selectivity of research actions to target more generic technologies.
 3. Steps will be taken to ensure access by the workforce, particularly in SMEs, to the latest innovations and R&D results, with concentration on the training of key personnel and on the pooling of higher education and training resources in collaboration with industry at a regional/local level; this effort will build on the experience of existing Community programmes, namely, COMETT, ERASMUS and FORCE.

Latin America: Diversification and Development Programme

The Commission has proposed a programme to encourage diversification and development in banana-producing countries of Latin America (Official Journal C 50 of 20.2.93).

The countries concerned include the Andean countries and the countries of the Central American Isthmus (Panama, Costa Rica, Nicaragua, Honduras, El Salvador, Guatemala, Colombia, Venezuela, Ecuador, Peru, Bolivia).

Measures available for financial support will have to be geared to production, with emphasis on the development and marketing of products which are not traded in significant quantities when the programme is adopted.

Eligible measures will be divided into a pre-investment and investment stage, with the former including training as well as research and technology transfer measures. Maintenance and current administrative expenditure may be chargeable under the programme but, with the exception of training and research programmes, the defrayal of expenditure may cover only the start-up phase and must be digressive.

Japan: Scientific and Technical Co-operation

On 15 January, Commissioner Ruberti met the Japanese Minister for Research, Mr Nakajima to assess current EC/Japanese co-operation in scientific areas.

The progress of collaboration on a number of large international research projects, such as the Human Frontier programme on advanced biology and the ITER experimental thermonuclear project, were discussed. New areas for collaboration were also covered on the agenda, including increased co-operation on work on climate change, and human genome research. It was agreed to establish a joint Scientific Forum to provide the framework for exchanges of information and to help identify future areas for co-operation. This will strengthen the already existing exchanges between young researchers and engineers.

The strengthening of links between the Joint Research Centre and Japanese research organisations was also stressed.

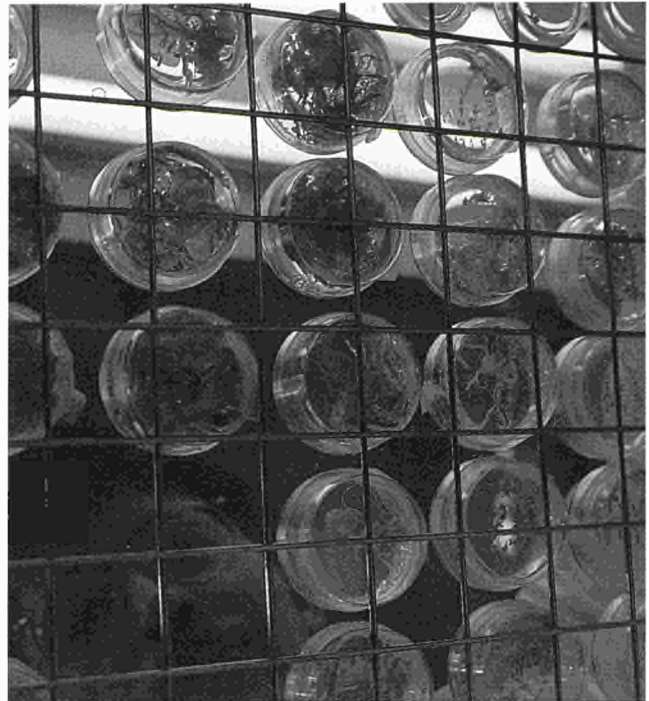
On 8 and 9 March, Japanese researchers visited Brussels to join experts from several Member States and from the Commission at a workshop on the problems of reducing CO₂ emissions. The workshop was followed by a three-day visit to relevant research centres in France, Germany and the Netherlands. Collaboration will be developed on various areas of common interest in this field.

Data Communications: Trans-European Networks between Administrations

On 18 March, the Commission adopted a Communication together with two proposals for Council Decisions on a series of guidelines for trans-European data communications networks between administrations and on the adoption in this sector of a multiannual Community support programme (IDA - Interchange of Data between Administrations).

This initiative is the first application in the telecommunications sector of the Community's trans-European networks actions. It will reinforce the functions essential for the efficient management of the internal market through the use of high-performance data communications networks, while at the same time ensuring that the citizens of Europe and the economic players derive maximum advantage from the four freedoms of movement provided for in the Treaty of Rome. For example, the network will help to ensure the rapid processing of case files on social security benefits outside the national territory, will promote personal mobility by linking national employment agencies and will set up networks for the prevention and control of national disasters.

The budget requested for the development work under the IDA programme is ECU 180 million for five years, supplemented by ECU 75 million in the form of a contribution to the development of the statistical information network (COMEDI



Carlsberg laboratory: Improvement of protein quality in barley

project) and ECU 85 million for the development of various priority networks - taxation, veterinary and phytosanitary information, education and training, monitoring of exports.

Euret: European Research on Transport

The EURET I programme is a specific programme in the Second RTD Framework Programme and was approved by the EC Council in December 1990. It is a relatively small programme with a total allocation of ECU 26.8 million but it is also the first EC research programme directly formulated on the basis of transport policy.

EURET I has three topics: optimising network exploitation, logistics and reducing harmful external factors.

The call for proposals was concluded in April 1991 and results from the contracts concluded should be available in mid 1994. The following projects are currently under way:

Optimising Network Exploitation

- cost-benefit and multi-criteria analysis for new road construction
- European rail traffic management system
- design and assessment of a vessel traffic management
- trials in automated air/ground data exchange for air traffic management in Europe
- study on the controller working position in air traffic management in Europe

Logistics

- economic situation and demand projections for freight transport in the Community
- economic and technical research of the transfer of goods; design and evaluation of rapid transfer

- *optimisation of manpower in maritime transport, improvement of competitiveness in EC maritime transport through implementing advanced technology*
- *taking human factors into consideration in the man/ship system*

Reducing Harmful Effects

- *methods of evaluating the safety of car and trailer trains*
- *assessment of the safety of various truck and trailer combinations*

EURET I was a useful start but was largely symbolic. DG VII is preparing the outlines for a new transport research programme - EURET II - which should provide new tools for developing sustainable mobility and efficient and safe transport under the best possible environmental and social conditions. EURET II will take account of the deliberations of the EC Council of Transport Ministers of December 1991. The Ministers stated that research and development at the Community level should contribute to an equilibrium between the direct economic advantages of transport and its negative effects on the well-being of citizens while expressing special interest in the development of specific standards for traffic guidance, integrated transport networks, safety and environmental protection. They also stressed that, in view of the Single Market, all research and development action in the transport sector should be considered with regard to the establishment of a coherent framework.

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Higher education in co-operation with industry

The Commission of the European Communities, Task Force Human Resources, Education, Training and Youth, has published the text of a Commission Communication to the Council and European Parliament entitled "European Higher Education/Industry Co-operation: Advanced Training for competitive advantage". This COMETT publication provides a permanent record of three Commission discussion papers issued during 1991. These are: A memorandum on Higher Education in the European Community (COM(91) 349 of 5.11.1991); A memorandum on Open and Distance Learning (COM(91) 388 of 12.11.1991); and a third Commission document entitled "Vocational Training in the European Communities in the 1990s". This publication focuses on the partnership between higher education and economic life, and tries to advance the debate in this area by examining lessons learned from many years of experience. Its objective is to bring forward suggestions on good practice in order to contribute to the debate on the role of university/industry co-operation in helping to meet

European training and skill requirements. Experience of higher education and industry co-operation at national level is drawn on extensively, and a synthesis of national experiences is featured. Work undertaken by the COMETT programme in transnational co-operation, involving higher education and industry in the field of advanced technology, is also covered.

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Abstracts of communications, proposals, green papers, and other Commission documents relating to research and technological development (together with the document's reference and date of publication), are available on the CORDIS RTD-Comdocuments database.

An interactive programme on floppy disk from COSINE

The COSINE Project Management Unit has announced the release of a valuable aid to new and potential users in the form of an introductory interactive programme supplied on a single floppy disk in versions for Macintosh, Windows and DOS. The programme will shortly be made available by file transfer. COSINE, a EUREKA project sponsored by 18 European governments as well as the European Community, aims to establish a pan-European OSI standards-conforming computer communications infrastructure for all academic, industrial and public sector R&D workers. The implementation phase, which began in 1990, includes a number of pilot sub-projects and the provision of pilot services.

For an introductory information pack or further specific details about COSINE, please contact

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Commission Plans for TIDE Programme

In a recently published response to a question from a Member of the European Parliament (Question No 731/92 of 6 April 1992) about the future funding of the TIDE programme (Technology for the Socio-economic Integration of Disabled and Elderly People), Mr. Pandolfi said that the Commission believes that a programme to develop telecommunications applications for the benefit of disabled and elderly people must have continuity. In this context it launched the TIDE programme in 1991 with a budget of ECU 8 million on the basis of preparatory work carried out in the framework of COST action 219. The objective of the exploratory programme was to evaluate the reaction of the Community market to the launch of development activities in this area. The response was excellent. Following the 1991 call, 70 tenders were received for a total of ECU 70 million. Of these, 21 were selected and financed. Of the ECU 10 million budget available in 1992, the Commission plans to allocate ECU 3 million to finance extensions to the contracts which were awarded in 1991 and which had not been fully provided for in the budget for that year. The remaining ECU 7 million is reserved for the continuation of the 21 projects from the first phase of TIDE, the value of which was established following the 1991 call for proposals, plus additional preparatory work. These contracts will enable the TIDE activities in industry to be maintained during 1992-1993.

Due to the difficulties posed by the lack of a legal basis, the corresponding budget heading will not be continued through 1993-1994. Instead, the Commission intends from 1993 onwards to initiate measures for disabled and elderly people under the Third Framework Programme within the specific programme "Telematics systems in areas of general interest", as provided for by the corresponding decision. This would give TIDE a legal basis and secure adequate funding. These measures will then find their natural extension in the Fourth Framework Programme (1994-1998) under the heading "Science and technology against the struggle for exclusion". (Official Journal No C95 of April 5, 1993).

LIFE: Environment Projects

LIFE (Financial Instrument for the Environment) is a Community instrument designed to fund projects which contribute to the development and implementation of Community environmental policy. ECU 400 million have been allocated for LIFE for the period 1991 to 1995.

The fields of action covered by LIFE are:

- the promotion of sustainable development and the quality of the environment;
- the protection of habitats;
- the development of administrative structures and environment services and of co-operation between responsible au-

thorities;

- the promotion of education, training and information on the environment;
- initiatives concerning regional or global environmental problems outside the Community.

Financial assistance is provided for actions of Community interest, which contribute significantly to the implementation of Community environmental policy, which meet the conditions for implementing the "polluter pays" principle and which provide for the dissemination of the results of the initiative in question. Assistance will cover preparatory measures, demonstration schemes, awareness campaigns and actions providing incentives or technical assistance.

The rate of assistance is:

- 30% of the cost in the case of actions involving the financing of income-generating investments, with the operator contributing at least as much as the Community grant;
- 100% of the cost of measures designed to provide the information necessary for the execution of an action and of technical assistance measures implemented on the Community's initiative;
- 50% of the cost of other actions or 75% for the cost of actions designed to preserve biotopes, habitats or species in danger of extinction.

Further information available from

Commission of the European Communities

DG XI-C-2

T-174 4/88

200 Rue de la Loi

B-1049 Brussels

Fax: 32/2/296 95 61

Portugal: Technological Investment

The Commission has approved ECU 14.6 million for a major investment in Portugal. The investment is designed to develop technologically up-to-date aeroengine maintenance. The project includes the transfer of technology from a leading aeroengine manufacturer with the aim of improving engineering skills, updating plant and allowing the overhaul of a new generation of engines.

The technology transfer part of the project will be financed by the European Regional Development Fund at 70%; a physical investment will also be financed by the ERDF at 40%. The total project is put at ECU 29.8 million, of which the ERDF will finance 14.6 million or 48.8%.

The project is being run by a government owned company, Oficinas Gerais de Material Aeronautico (General Workshops for Aeronautical Material). The workshops are located at Alverca, 40 km north of Lisbon.

European Technology Observatory 93

The European Technology Observatory presents the most comprehensive data available about the European IT market. It contains special studies about the European software market, market potentials in Eastern Europe and the scenario for IT standardisation as well as analyses of environmental policies and requirements for the European IT industry.

The Observatory is an indispensable source of information in marketing and technology for European market players, users of information technology hardware, software and services, for trade fair organisations and visitors, for politicians and national government representatives, for organisations involved in R&D, standards and education relating to IT and for the media.

This first edition of the Observatory is a joint initiative by the Commission of the European Communities, EUROBIT and the European trade fairs CeBIT Hanover, SIMO Madrid and SMAU Milan. It has been produced with the support of DG XIII.

Available from

European Information Technology Observatory (EITO)
c/o EUROBIT
Lyoner Strasse 18
D-6000 Frankfurt/M. 71
Tel: 49/69/66 03 350

ECLAIR: European Collaborative Linkage of Agriculture and Industry through Research

ECLAIR Progress Reports - 1992
C L Mangan, Editor
EUR 14913
348 pp
ECU 40

ECLAIR Projects Synopses
C L Mangan, Editor
EUR 14967
216 pp
ECU 21.50

The ECLAIR research programme, 1988-93, is designed to improve links between agriculture and industry by encouraging close collaboration in individual research and technological development projects based on recent progress in the life sciences and biotechnology.

The priority is to encourage the transfer of technology in areas where it will have most practical and economic benefit. This involves the production and testing of new products derived from agricultural raw materials, and the development of



Oxford Polytechnic: Climatic Xenon tester

new inputs for agriculture, such as crops, fertilisers, pesticides, vaccines, growth promoters, etc., often using state-of-the-art biotechnological techniques.

Forty-one shared-cost projects were selected in 1989, with 360 institutions participating in the form of SMEs, large industries, universities and government research institutions. The total budget is ECU 130 million with an EC contribution of 63 million.

Progress Reports describes the publishable contents of the first year research results for the ECLAIR programme. The project reports are presented in three sections: the general objectives of each project, current state of the project and specific objectives and summary of the work of the individual partners over the reporting period, where the milestones and deliverables are generally described.

Projects Synopses describes the full complement of the research projects in the ECLAIR programme. The projects are divided into eight areas of research; oils, lignocellulose, carbohydrates, animals, biological pest control, crop production and storage, proteins, biorefinery. The projects are presented by a one page technical overview of the objectives, together with a one page description of the administrative details pertaining to the project. The annexes give details of ECLAIR participants, the Advisory Committee, the VALUE programme, information on databases useful for finding research partners and ECLAIR related studies launched during the programme to complement and supplement important research topics related to the programme.

Available from

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2 Rue Mercier
L-2985 Luxembourg
Tel: 352/499281
Fax: 352/488573

River Water Quality - Ecological Assessment and Control

DG XI
EUR 14606 EN-FR
ISBN 92-826-2929-5
751 pp
ECU 66

This work covers the proceedings of the International Conference on River Quality - Ecological Assessment and Control, held in Brussels from 16-18 December 1991, organised by the Commission and sponsored by DG XI (Environment, Nuclear Safety and Civil Protection), the National Rivers Authority for England and Wales, the Water Research Centre (U.K.) and the European Institute for Water (Italy).

The main objective of the conference was to provide an international forum to discuss the different approaches to the ecological assessment of river water quality and how these relate to the management of rivers. The intention was to promote a better understanding of the topic and contribute to a more successful implementation of the Commission's proposed Directive on the ecological quality of surface waters.

The conference was attended by 324 delegates from 24 countries, principally from the Community, Central and Eastern Europe and North America.

Over 30 papers were delivered and these are reproduced in the volume. Topics covered include objectives and approaches to river water quality management, biological techniques for assessing water quality and control of discharges.

Available from

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Tel: 352/499281
Fax: 352/488573

Thesaurus Guide - Analytical Directory of Selected Vocabularies for Information Retrieval

EUROBrokerS, for DG XIII
ISBN 92-826-4956-3
1033 pp
ECU 78

The Thesaurus Guide is an analytical inventory of all existing structured vocabularies which are available in at least one of the official Community languages. The Guide is intended to help in the selection of the appropriate documentation language for information retrieval activities.

It is planned to update the Guide annually, and it is available via the Eurobase data host.

The inventory comprises both bibliographic data and details of content and structure of the different thesauri. The introduction and subject index are in English, German and French; a table of the most frequent symbols used and a table of subject fields are given. The description of thesauri cover the following: general information, mathematics and physico-technical sciences, physico-chemical technology, astronomy and geosciences, agriculture and nutrition, biomedical sciences, regional and environmental sciences, social sciences, culture and the arts. An index of responsible organisations and contact persons is also included.

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Guidelines for Ventilation Requirements in Buildings

Environment and Quality of Life Series Report No. 11
Joint Research Centre - Environment Institute
EUR 14449 EN
44 pp



Geologists examining Quaternary borehole cores from the Southern North Sea aided by the use of seismic sections of the area

Ventilation is the supply to and removal of air from a space to improve the standard of indoor air quality. Current ventilation guidelines and standards in European countries still fail to prevent exposure to pollutants with potentially adverse effects, particularly materials in buildings.

The Guidelines set out in this Report, which deals with non-industrial buildings, consider the total pollution load caused by materials in buildings, occupants and their activities. The Report prescribes a certain level of indoor air quality to avoid adverse health effects.

The first step is to determine the air quality required in the ventilation space. Three different levels of air quality are suggested. The next step is to determine the pollution load in the air caused by pollution sources in the environment. The total pollution load is found by adding the loads caused by the building and its occupants. The available outdoor air quality and the ventilation effectiveness of the ventilated space are also considered. The ventilation rate required to provide the required indoor quality can then be calculated based on all present pollution sources, the available outdoor air quality and the ventilation effectiveness of the ventilated space. The ventilation rates required for health and comfort are calculated separately and the highest value is used for design.

Available from

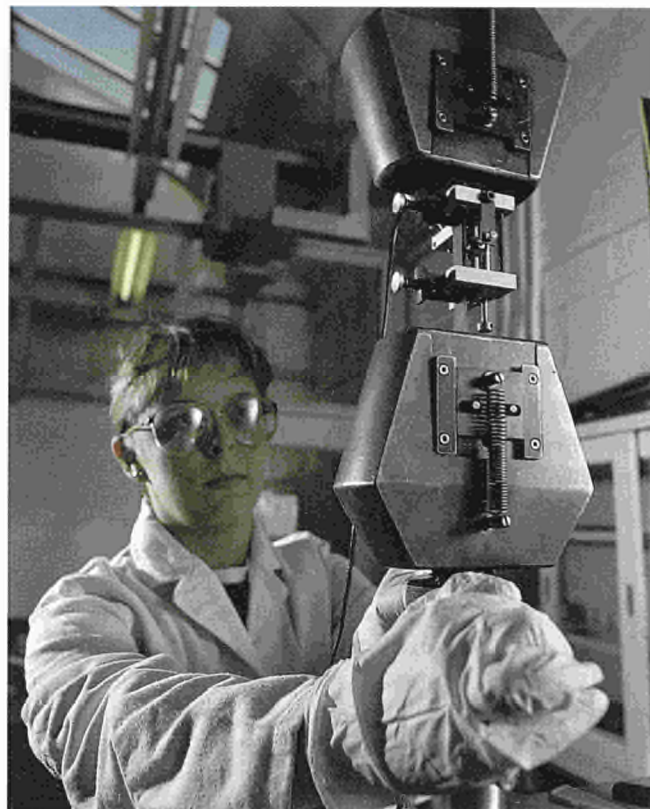
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Tel: 352/499281
Fax: 352/488573

Standards, Technical Regulations and Quality Assurance: What will change? What are the Implications for Community S&T Policy? — Overall Review

DG XIII
R M O'Connor
EUR 14703 EN
106 pp

This review was prepared for the Strategic Analysis of Science and Technology Unit (SAST) of DG XII. SAST activities are part of the MONITOR Programme, which aims to identify new directions and priorities for Community RTD policy and to help to clarify the relationship between RTD policy and other Community policies.

In the case of the SAST project to which the current report contributes, the relevant areas of Community policy include the promotion of RTD for industrial competitiveness, the re-



Grenoble, France.

European ice-core programme on atmospheric chemistry and climate

moval of trade barriers and technical harmonisation in the context of the Single Market, protection of consumers and the environment, health and safety issues, technological liberalisation and promotion of innovation.

The project concerns not only the RTD work needed for the establishment, improvement and implementation of regulations and standards, but also the implications of changes taking place in the area of standardisation, technical legislation and quality assurance for industrial RTD at large.

The review is published as part of a set of sectoral reports dealing with the automobile, building, electronic components packaging and interconnection, medical devices, water and agro-food sectors (EUR 14704 to 14709 EN). The sectors selected were studied with a common analytical framework to provide a basis for developing the general conclusions and recommendations presented in the overall review. For that reason, the contents of this report and those of the sectoral reports should be viewed in the context of the Overview/Briefing Paper for consultations produced in the first phase of the project (EUR 14702 EN).

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2 Rue Mercier
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Technology Response Network: Catalogue of Offers and Requests

The European Association for the Transfer of Technologies, Innovation and Industrial Information (TII) has published the "Technology Response Network Offers and Requests Catalogue" (Volume V, No; 121-156, 1993).

TII's Technology Response Network (TRN), supported by the SPRINT programme, represents over 100 technology brokers located throughout Europe with correspondents in Canada, Japan and the U.S.A. A Catalogue of new entries is distributed to all TRN users every four to eight weeks and old offers are automatically removed after six months.

The current Catalogue includes technology offers and requests entered in December 1992 and January 1993. Offers and requests are printed separately and entries are indexed on the basis of the TII Technology Classification which enables users to consult the catalogue selectively for specific areas of technology. Entries are limited to technologies with immediate or short-term potential; in the case of offers, this means that TRN only accepts technology already in industrial use or with specified industrial potential.

Further information from

*European Association for the Transfer of Technologies,
Innovation and Industrial Information (TII)*
3, Rue des Capucins
1313 Luxembourg
Tel: 352/463035
Fax: 352/462185

Comett II: Interim Evaluation

ISBN 92-826-5234-3

The Taskforce on Human Resources, Education, Training and Youth has published the COMETT II Interim Evaluation Report (1990-92), entitled "Transnational Training for Technology in Europe - The COMETT Experience".

COMETT, the Community Programme for Education and Training in Technology, was established in 1986.

During its first three years, COMETT II supported over 15,000 student placements and over 300 personnel exchanges. Over 7,000 training courses are also being funded, giving training in advanced technology to more than 500,000 people.

So far, COMETT has involved nearly 10,000 enterprises, 2,400 universities and higher education institutes and 4,100 other organisations from the EC and EFTA. It is estimated that around 20,000 European organisations will be involved in COMETT II by 1994.

As well as the Interim Evaluation Report, the Memorandum on Higher Education (COM (91) 349), issued in November 1991, addressed a wide range of issues relating to co-operation between higher education and industry, taking account of the experience gained through COMETT.

Available from

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2 Rue Mercier
L-2985 Luxembourg
Tel: 352/499281
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Technology and the Future of Europe

G. Pardoe, F. Green, J. Fawcett and L. White
EUR 14456
ISBN 92-826-4626-2
158 pp
ECU 18

The report aims to provide a reasoned view on how new technologies will act on the Community and the people in it, up to the end of the century.

Since economic strength in the Community leads to benefits enjoyed by its people, the report does not limit its consideration to technology but also takes account of the many socio-economic implications resulting from the development of technology.

The need for the report stems from the effect of the technologies, which are all-pervasive. Since both the technologies and the issues they raise are so numerous that a comprehensive treatment in a single volume is impossible, the report opts for selecting examples of technologies and applications and explores a number of questions: how are the technologies impacting and how should they be impacting; what are the effects and what do they imply; how are they affecting people and the economy, and where is Europe going in the world context?

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EUROTHERM seminar 1993: First announcement and call for papers

"Compact Two-Phase Heat Exchangers" is the subject of a seminar which will take place at the Heriot-Watt University in Edinburgh, Scotland on 16-17 September 1993. The aim of this specialist seminar, organised with the assistance of the Commission of the European Communities, is to create a forum for those working in the area of compact evaporators and condensers to meet and participate in scientific discussion. Short presentations of current work are planned, together with a limited number of paper presentations. The Journal of Heat Recovery Systems and CHP will publish a summary of the seminar and of selected papers by arrangement with the authors.

Heriot-Watt University
Attn. Prof. D. A. Reay
Edinburgh EH14 4AS
Fax +44-314513131

INFO

International Scientific Film Festival

The 9th International Scientific Film Festival will be held at Palaiseau, near Paris, from 12 to 14 November 1993.

The aims of this annual Festival are:

- to disseminate scientific information through audiovisual, cinema and video transmissions;
- to promote meetings between scientists, researchers, teachers, technicians, experts in the audiovisual field, experts in the dissemination of scientific information and the public;
- to promote high quality and innovative scientific audiovisual transmissions.

The Secretariat
Festival International du Film Scientifique
Mairie de Palaiseau B.P. No. 6
91125 Palaiseau Cedex

INFO

Joule: Wave Energy Symposium

The first European Wave Energy Symposium will be held at the Heriot-Watt Congress Centre in Edinburgh from 21 to 24 July 1993, with the support of the specific Community programme for RTD in non-nuclear energy, JOULE 1990-94. It is anticipated that this will be the major event for wave energy in 1993 with participation from Europe and the rest of the world.

The date of the Symposium has been specially chosen as being close to the end of JOULE's present series of wave energy study projects, enabling conference participants to examine and discuss many of the results derived from prototype and pilot plants built, operated and tested in recent years.

The inclusion of wave energy as a study area within JOULE has emphasised the importance placed on this promising and environmentally safe technology. The Symposium aims to



Institute voor Tropische Geneeskunde, Antwerpe, Belgium: Test of Impact of sexually transmitted disease and HIV infection on pregnancy

bring together those who are active in this field, particularly those involved in the JOULE programmes and projects themselves. This will be the first major opportunity to discuss and compare results from this work and to assess future trends.

The Symposium will cover all areas of wave energy, resource assessment, technology development, design methods, testing, prototypes, commercial development, planning and economics.

Mrs E Gibson
National Engineering Laboratory of Glasgow (NELG)
East Kilbride
Glasgow G75 0QU
Tel: 44/355272154, Fax: 44/355236930

INFO

European Research Conferences, 1993

The 1993 programme of European Research Conferences is sponsored by the European Science Foundation and by the Commission of the European Communities. Most of the Conferences listed for the year have received funding, or are recommended for funding, from the specific programme of research and technological development in the field of human capital and mobility (1990-1994) under the Third Framework Programme.

Each Conference consists of a series of meetings, usually held every other year. There are no written contributions or proceedings. Unconventional ideas and new approaches, not yet fully explored, are encouraged. General areas covered by the 42 European research Conferences scheduled for 1993 include: Physics; Materials; Chemistry; Life Sciences; Biomedicine and Health; Environment; Geosciences; Oceanography; Social Sciences; Economics; Humanities.

The Conferences are open to scientists from all over the world. Attendance is limited to about 100, including speakers and those selected by the Chair from among the applicants. A fee covering board and lodging will be charged, though some grants will be available for young researchers, in particular

continued on next page

those from less favoured regions of Europe. To provide fuller information about research conferences in Europe, the programme announcement also includes details of Jacques Monod Conferences (Biology and Biotechnology) organised by CNRS, and Philippe Laudat Conferences (Biotechnology) organised by INSERM, as well as the EUROMECH Colloquia (Fluid and Solid Mechanics).

European Science Foundation
Office of European Research Conferences
Attn. Dr. Josip Hendekovic
1 quai Lezay-Marnesia
F-67080 Strasbourg
Tel. +33-88767135, Fax +33-88366987, Telex 890440



The deadline for applications for attendance at a European Research Conference is three months before the date of a particular Conference.



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