Innovation & Technology Transfer

1/96

EU Training Programmes

A Skilful Investment

plus

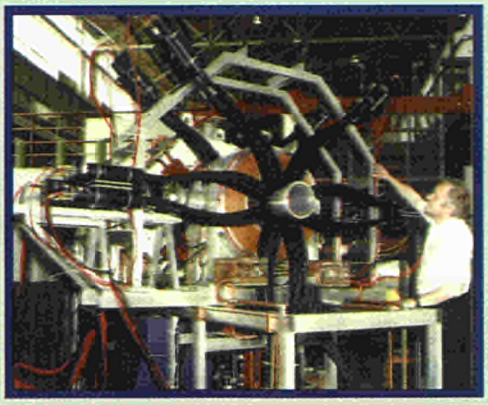
- Task Forces: Project Clustering under way
- Information Society: Inter-Regional Initiative
- Simulators to Train Printers: Craft Case Study
- Radiation Protection
- and more

Pull-out Guide to RTD Info Sources

PUBLISHED BY THE EUROPEAN COMMISSION

INNOVATION PROGRAMME • JANUARY 1996

CONTENTS



A training in research - see Dossier, page 4.

Cover photo: students following a 'Craft and Technician' course at Brooklands College, UK.

Training for Innovation

Education and training are crucial topics for a society determined to benefit from innovation and the sensitive application of new technologies. This is the focus of the Dossier (pages 4-9) in this first issue of 1996, designated the European Year of Lifelong Learning. As the Dossier shows, EU programmes cover a broad spectrum, with activities relevant to education at school and university, vocational training, training for new skills, and training through research.

By coincidence, this issue's main case study (page 3) features a training simulator for the printing industry, developed under BRITE-EURAM. The simulator is bringing to small printing firms training possibilities which were previously only available in the heavy printing industry.

As in previous years, this first issue of 1996 also includes the annual Quick Reference Guide to sources of information on the EU's research programmes (pages 11-14). The Guide covers introductory brochures, the comprehensive in-depth coverage provided by CORDIS (the Community R&D Information Service), and key contact points for the different programmes.

Publication of the Green Paper on EU Innovation Policy was being anticipated as this issue went to press. This subject will be covered in depth in future issues of *Innovation & Technology Transfer.* ■

ABOUT INNOVATION & TECHNOLOGY TRANSFER

Innovation & Technology Transfer is published six times a year in English, French and German by the European Commission's Innovation Programme, which aims to strengthen Europe's innovation infrastructure and disseminate research results to industry.
The emphasis is on timely news relevant to these objectives and in-depth 'Case Studies' of successful projects. Each issue also includes a major Dossier on one topic. Subscription is free - please fill out the request form on the back page and fax or post it back to DG XIII/D-2.

PUBLISHED BY:
European Commission, Directorate-General XIII
Telecommunications, Information Market and Exploitation of Research
Directorate XIII-D
Dissemination and Exploitation of RTD Results, Technology Transfer and Innovation
Address
DG XIII/D-2, JMO B4-082, L-2920 Luxembourg
Fax: +352 4301 32084

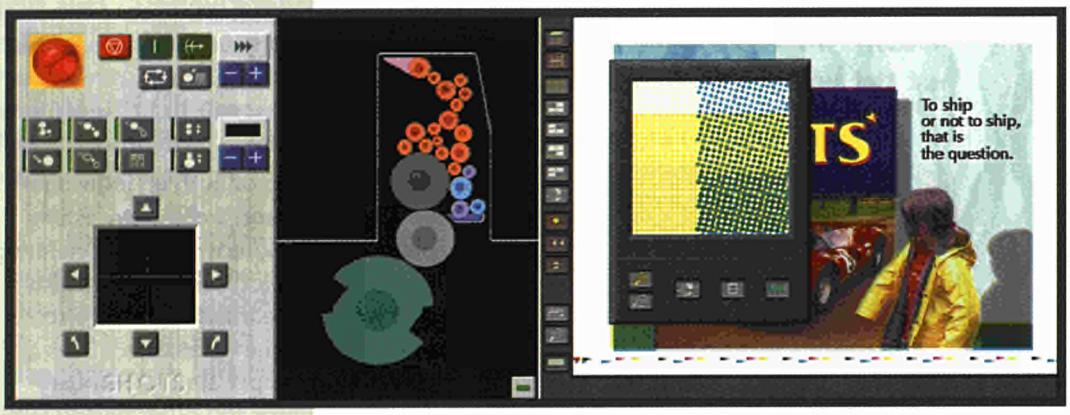
WRITTEN AND PRODUCED BY:
European Service Network, Brussels
Tel: +32 2 646 40 20
Fax: +32 2 646 53 57
E-mail: esn@infoboard.be

Printed in Germany

► BRITE-EURAM/CRAFT

A Simulating Experience for SMEs

Simulators have long been used to reduce the risks involved in training pilots. A BRITE-EURAM project now offers the same advantages to SMEs in the printing industry.



The press control monitor (left) lets the operator monitor and adjust the paper, ink and press, while the print copy monitor (right) shows every detail of the result.

The European printing sector employs more than 850,000 people in 80,000 companies. Its processes demand great skill and judgement and apprentices traditionally require at least two years' close supervision. Using real printing presses for training is time-consuming at best, with the inevitable mistakes representing an expensive waste of materials.

Simulators, on the other hand, save time and money and have been used by the heavy printing industry for about five years. The original simulators, developed by French company Sinapse(1), are well-suited to the large, fast 'Web' presses used in the heavy industrial printing sector. However they are not suited to the more varied needs of the lighter printing sector, and at US$60,000 are very expensive for the SMEs that dominate it.

An Industry-Driven Solution

The solution is SHOTS (Sheet-fed Offset Training Simulator), a BRITE-EURAM CRAFT(2) project launched in 1994. Led by Sinapse, the 22 participants from five countries include 15 SMEs from the printing industry, another four from the printing training sector and the British Printing Industries Federation (BPIF).

"The BPIF asked us if we could produce simulators more suited to SMEs' needs," recalls Mr Peter Herman of Sinapse. "These need to simulate many different scenarios because light presses use a wide variety of inks and can print on anything from bible paper to cardboard."

End-user involvement is clearly important in a project such as this. As very few SMEs can afford to invest in two years of development before seeing a return, the 460 kECU award from CRAFT, representing just over half the total budget, was the ideal solution.

"On the R&D side, we got valuable end-user feedback, while the industrial participants benefited from evaluating early versions," explains Mr Herman. "And although our original Web simulators were developed for a world market of 400, the size of the SME printing industry means that we can market SHOTS for a fifth of the price."

25% Faster Training

SHOTS uses a standard microcomputer and two large monitors - one to display the press control console, another for the 'printed' result - to accurately recreate real-life scenarios.

"SHOTS' scenario generator simulates over 40 types of print faults and more than 300 possible causes - from simple problems such as 'off' colours to more complex ones such as corroded printing blankets and gripped paper. Our partners say that it reduces training times by about 25%," Mr Herman adds. "SHOTS has also dramatically increased the confidence and skill levels of their experienced personnel - cutting production times and increasing the percentage of good copies in each run."

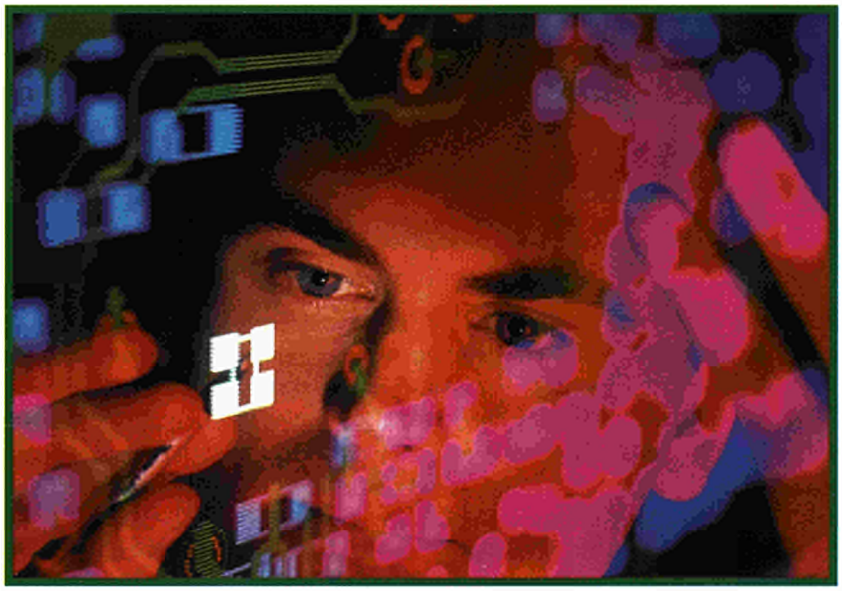
SHOTS' world-wide launch starts this June, when it will be used in a competition to find the world's 'Best Apprentice Printer'. Meanwhile, the BPIF aims to establish SHOTS in the British National Vocational Qualifications scheme. A further technology transfer project is being planned to make SHOTS available to even the smallest of printing firms. □

Contact
Mr P. Herman, Sinapse
Tel: +33 1 69 41 85 85
Fax: +33 1 69 41 85 90

(1) Winner, Best Training Software Award, 1992 European Training Technology Event.
(2) A CRAFT Award brings together many SMEs with similar R&D needs with the right R&D supplier. See the BRITE-EURAM dossier in issue 1/95. SHOTS is project no. CR-1210-91.

In Training

A recently released EC White Paper stresses the importance of education and training to Europe's economic prosperity. These factors are just as crucial to individual companies, for whom investing in employee training is vital to competitiveness. This first Dossier of 1996 - the European Year of Lifelong Learning - looks at the various EC Programmes in this sphere.



IMEC, the Belgian Inter-University Microelectronic Centre (see edition 5/95) features a chip design environment 5-10 years ahead of market technology. Thirty-two researchers visited IMEC through the Large Scale Facilities programme in four years.

As Dr Thomas O'Dwyer, Director-General of DG XXII (Education, Training and Youth), noted in an interview in CORDIS *focus*(1), "Technological development in general, and the information society in particular, are calling for a new range of skills from the working population - and even those who do not work. How will the challenge of providing these new skills be met?"

Meeting this challenge is the common goal of a wide range of EC Programmes. Although their target audiences vary, these Programmes are all based on the same conviction - that Europe needs to move towards the concept of lifelong learning in the 21st century.

This was elaborated in a recent White Paper on Education and Training, proposed by Commissioner Cresson last November. Know-how, the Paper points out, will become an even more important basis of both an individual's employability and a company's competitiveness. Moreover, the accelerating pace of technological change means that what we learn at school is often out of date within a decade.

The White Paper aims to stimulate debate on these and other related subjects. It concludes with several recommendations:

- lifelong learning and vocational training initiatives must be reinforced;
- links between schools and the workplace should be strengthened;
- a system recognising skills and abilities learnt in the workplace is required;
- 'schools of second chance', for those who do not succeed in the traditional education system, should be established.

The Year of Lifelong Learning focuses on the first priority. As *Innovation & Technology Transfer* went to press, the EC was receiving proposals from National Co-ordination Units set up in each Member State (see last issue, page 5, for more details).

The Year will be co-ordinated closely with all the EC initiatives which involve training and education. These are very broad fields, so there are many relevant EC initiatives, including:

- the Fourth Framework Programme for research and technological development (RTD);
- the Programmes run by DG XXII (Education, Training and Youth), which is also administering the Year of Lifelong Learning;
- Community Initiatives linked to the European Structural Funds.

(1) CORDIS focus, issue no. 46

for Industry

I. Fourth Framework Programme

The most relevant Specific Programme is that implementing the Fourth Activity of the Fourth Framework Programme. The 774 MECU **Training and Mobility of Researchers (TMR) Programme**, as its name suggests, focuses specifically on training Europe's researchers.

The Programme follows on from the Human Capital and Mobility (HCM) Programme (1990-1994). Like HCM, its main aim is to stimulate training through research and encourage the mobility of researchers between sectors (universities, research institutes and industry) and co-operation between disciplines.

Unlike the previous Programme, however, TMR specifically encourages industrial participation. There are no pre-established targets - the Programme aims to encourage the creativity and innovation of researchers in conceiving projects.

There are three main activities:

- funding the expenses involved in networking together research teams from a number of countries to work on joint research projects. These networks generally link at least five research teams from at least three countries, although smaller associations (including 'twinnings') working in emerging areas may be supported. Funds available: 334.8 MECU.
- continuing the work carried out under the Large Scale Facilities Programme, which provides researchers with access to large-scale European research facilities that they would normally be denied. Funds available: 111.6 MECU.
- helping researchers train and

The TMR Programme's annual EU Contest for Young Scientists involves over 20 European nations.

Case study: HCM/TMR

A Magnetic Attraction

The HCM Programme funded a total of ten networks researching magnetic nanostructures in the early 1990s. At the time these structures - each composed of a mere handful of individual atoms - were more of a scientific curiosity than anything else, and only one industrial partner was involved.

Today, however, that has changed. The excitement is due to the Giant Magneto-resistance Effect, an unexpected and as yet unexplained phenomenon first reported in the early 1990s. The Effect allows the electrical resistance of these nanostructures to be significantly changed by a relatively small external magnetic field.

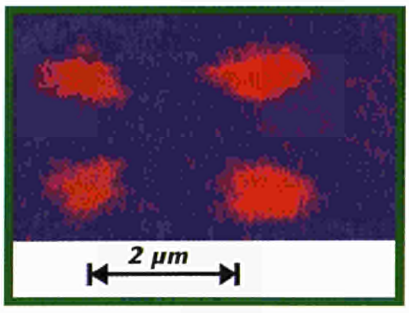


Image: University of Nijmegen

The areas of reversed magnetisation (red) in a Co/Pt multilayer represent digital information written on magneto-optical data storage media. The novel Scanning Probe Microscope which took this image allows sub-micrometer resolution magnetic imaging, and was developed in the HCM network NANOMAG.

The potential for electronic devices, particularly for data storage, has spurred European industry into action - around half of the 15 proposals for networks focusing on these structures under the new TMR Programme involve at least one industrial partner. These industrial partners are almost equally split between major European electronic firms and SMEs. Together they represent the new industrial emphasis of the TMR Programme.

Europe is now considered the world leader in this field, which has progressed from scientific curiosity to the subject of intense industrial research in under five years.

●●● work in a laboratory in another country. Particular attention is attached to the training of researchers either belonging to or going to industrial laboratories, especially SMEs. There are also special possibilities for researchers from less-favoured regions. The programme expects to finance 3,000-4,000 fellowship grants over the 1994-1998 period. Funds available: 260.4 MECU.

There are many possibilities for technology-oriented companies, who could host visiting researchers from a foreign university, send one of their own researchers to a large-scale research laboratory, or get involved in a research network. Accompanying measures also exist to support high level conferences and training courses, encourage participation from less-favoured regions and more.

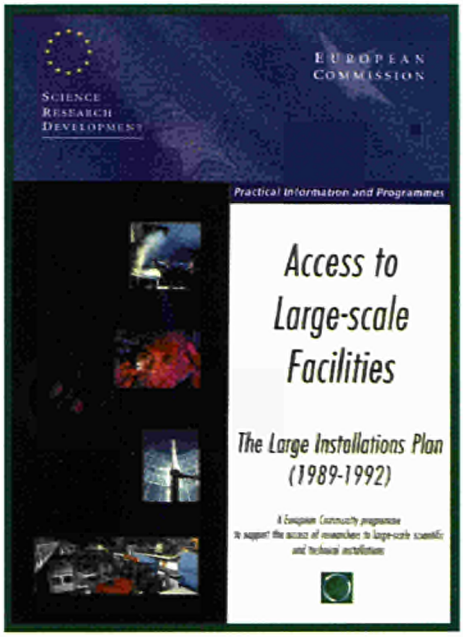
Other Specific RTD Programmes

Apart from TMR, many Specific RTD Programmes support training activities. Many of them finance fellowship grants identical to those under the TMR Programme, which administers them on the Programme's behalf. The three 'Life Sciences' RTD Programmes (Biotechnology, Biomedicine and Health, and Agriculture and Fisheries), for example, will sponsor around 1,500 additional fellowships between them, as well as those financed by the TMR Programme.

In addition, some Specific Programmes run highly specific training activities, often to promote the successful uptake of their new technologies. These activities offer companies the chance to experiment with the very latest technologies before they leave the laboratory. They include:

■ **Information Technologies (Esprit[2]):** a range of Accompanying Measures exist to support the main RTD work and enhance its effect through co-ordination and stimulation of innovation in industry. Of particular interest is the new IT Project Traineeships scheme, where people from outside an Esprit project are trained to exploit its results. Other relevant Accompanying Measures include awareness actions, demonstration projects, first user actions and best practice actions.

■ **Telematics Applications:** projects launched under this Programme include a phase where the new technologies are validated with user groups in a realistic environment. In addition,



Access to Large-Scale Facilities. Sixty pages, nine languages, 7 ECU from EUR-OP Sales Agents. Catalogue No: CG-NA-15860-X-C (where X is the two-letter language code).

Sector Four of the Programme focuses on developing Telematics for Education and Training.

■ **Industrial Technologies (BRITE-EURAM[3]):** this Programme is currently preparing an Accompanying Measure concerning training. The aim is to provide industrial companies with technical skills and to ensure technology transfer to industry. Two types of training are envisaged:

• training within research projects: funding for research training can be applied for either along with the original project proposal or during the first year of the project (selected projects only);

• training project participants to exploit and transfer their project's results.

■ **Non-Nuclear Energy (JOULE-THERMIE[4]):** the R&D component of the Programme is currently developing a scheme similar to the first point under BRITE-EURAM (above). The idea is to transfer public researchers - often recent graduates - into private companies within or parallel to a research project.

The demonstration component, on the other hand, leads on from the previous THERMIE Programme, which supported over 50 training and vocational activities. Directed at specific audiences (SMEs, professional associations, etc.), the new actions will aim to disseminate successful energy efficient technologies and improve market knowledge.

II. DG XXII Programmes

The Task Force on Human Resources was originally established in the late 1980s to implement a series of Programmes concerning education and training. In 1994 the Task Force became DG XXII (Education, Training and Youth) and the Programmes were reorganised, resulting in:

■ **SOCRATES**, which aims to improve the quality and relevance of education for children, young people and adults. It builds on and adds to previous Programmes such as ERASMUS (mobility of university students), EURYDICE (information network on education in the EC), ARION (study visits for education specialists) and parts of the LINGUA (language learning) and IRIS (training programmes for women) initiatives;

■ the second phase of the **TEMPUS** (Trans-European Mobility scheme for University Studies) Programme, which focuses on university exchanges with the countries of Central and Eastern Europe;

■ **YOUTH for EUROPE**, which promotes youth exchanges across Europe;

■ **LEONARDO DA VINCI**, the new integrated European vocational training programme.

LEONARDO DA VINCI: Vocational Training

All these Programmes will benefit European industry and society in the long term. But the most directly relevant DG XXII Programme to European technology-based companies today is the latter one, commonly known as **LEONARDO**.

Like SOCRATES, LEONARDO builds on and adds to many ●●●

(2) See Innovation & Technology Transfer, edition 6/95.

(3) See Innovation & Technology Transfer, edition 1/95.

(4) See Innovation & Technology Transfer, edition 3/95.

Case study: HCM/BIOMED

Nurturing Research

Plant Genetic Systems has hosted almost a dozen doctorate and postdoctorate students at its laboratories in Ghent (Belgium).

As its name suggests, Plant Genetic Systems (PGS) is an agricultural biotechnology company. Its primary focus is the application of its patented genetic engineering technology to produce new varieties of corn, oil seed rape and selected vegetables for the European, North American and Asian markets. It has received 43 patents and has another 142 applications pending worldwide.

"Our technologies represent a better future for agriculture," explains Dr Barend Verachtert, project administrator at PGS. "To begin with, we've developed and patented a more effective and cheaper system for creating hybrid seeds. This is a huge market - the US$13 billion seed business is totally dominated by hybrid seeds because they yield more, are more resistant to disease and are more uniform."

PGS was also the first company in the world to develop insect-tolerant plants by introducing a gene from the bacterium *Bacillus thuringiensis* (Bt). This gene instructs the plant's cells to create proteins that are toxic to insects, protecting the plants from a wide range of pests. The company is currently developing a multiple *bt* gene strategy to prevent or delay insects from becoming resistant to the proteins.

"Farmers around the world spend more than $6 billion each year on insecticides - more if you count the costs of application," Dr Verachtert continues. "Genetically-based insect resistance will cut costs, raise yields and lower pollution."

Growth through R&D

PGS, formed in 1982 as a spin-off from the University of Ghent, now has 135 employees. It is also the head of an international group with subsidiaries and joint ventures in the US, Canada and India. Over three quarters of the group's staff worldwide are involved in research.

PGS is no stranger to pan-European research, having participated in every EC agricultural biotechnology Programme since the mid 1980s. They have also co-operated in two EUREKA projects, and are involved in three proposals submitted earlier this year to the EC's new FAIR Programme.

Photo: Plant Genetic Systems.

EC researcher mobility grants: a win-win situation for students and Plant Genetic Systems.

They have also hosted almost a dozen students through both the HCM Programme and similar schemes by the RTD Programmes. In each case, the student first approached PGS with ideas for research projects. After some discussion, PGS chose the students they found most interesting and helped them develop their application. Successful applicants received an EC grant to work at PGS for two to three years.

Costs and Benefits

According to Dr Verachtert, there are many advantages to hosting these young researchers. "To begin with, of course, we get a regular injection of new brains straight out of fundamental research laboratories. As an added bonus, they come from several different countries, which expands our network of contacts throughout European academia."

These researchers are keen, highly skilled and cost-effective. This, Dr Verachtert observes, "allows us to pursue fundamental, higher risk research which is crucial to our long-term future. The students, of course, prefer this sort of work too, as it gives them more freedom than a normal commercial environment. And they use equipment they would not normally find in a university."

Not that these students are 'free of charge'. "The company supplies more than bench space - the supervisors may devote up to one fifth of their time on the students' work," Dr Verachtert says. "The grant does partly cover that, of course, but it's nevertheless an important factor. There's no doubt in my mind, however, that it's very worthwhile."

Contact
Dr K. O'Brien,
Plant Genetic Systems
Tel: +32 9 235 84 28
Fax: +32 9 224 06 94
E-mail: baver@pgsgent.be

previous Programmes, including COMETT (university-industry technological training), FORCE (continuing vocational training), PETRA (vocational training of young people), EUROTECNET (vocational training in response to technological change) and parts of the LINGUA and IRIS initiatives.

LEONARDO aims to help people prepare for the professions of tomorrow, anticipate change, visualise the future and prepare and experiment with new vocational training methods.

One of its main activities is supporting **transnational pilot projects**, which aim to develop new ways of anticipating training needs, devise new training methods and content, disseminate these results into vocational training systems and improve language training.

Like all LEONARDO actions, these projects must involve different types of organisations, such as companies, public authorities, training organisations, universities, trade associations, employee organisations and others. There are many possibilities for companies, who can be helped to:

- integrate work and training within their organisation;
- strengthen links between their training and overall economic strategies;
- develop both customised training programmes and common training modules;
- continuously assess skills at both individual employee and company level;
- improve the transfer, adaptation and use of new technologies, and the ability of employees to cope with technological change.

A second LEONARDO activity - **transnational placement and exchange programmes** - enables a wide variety of people to receive part of their training in another Member State. All actions involve the transfer of technological innovations, so this has obvious relevance to technology-based companies wishing to expand their knowledge and links to other European countries.

Under this scheme a company could send their own personnel to another country for continued training, or they could receive university students, researchers, recent graduates or experienced employees from another country. Exchanges can also be proposed specifically for learning languages.

'Le Magazine': a quarterly covering all DG XXII Programmes.

Contact Information

I. Fourth Framework Programme

- **Training and Mobility of Researchers**
  Mr J. Rosenbaum, DG XII-G
  Fax: +32 2 296 32 70
- **All other Specific Programmes**
  See list of contacts in Quick Reference Guide, page 14.

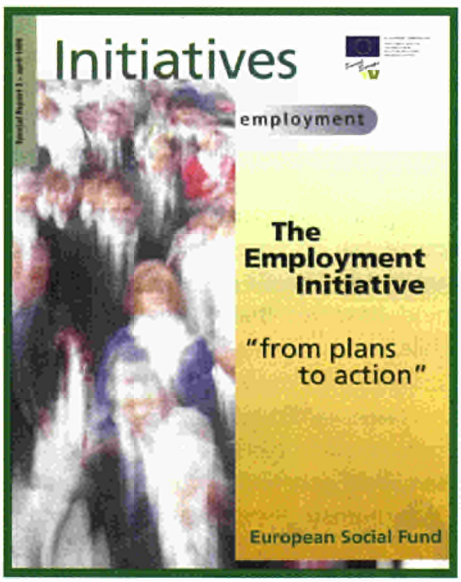
II. DG XXII

- **Leonardo**
  Mr F. Gutmann
  Tel: +32 2 295 96 50
  Fax: +32 2 295 57 23
- **Socrates**
  Mr A. Smith
  Tel: +32 2 295 83 82
  Fax: +32 2 295 57 23
- **Year of Lifelong Learning**
  Mr J. Jamar
  Tel: +32 2 295 20 82
  Fax: +32 2 299 41 52

III. Structural Fund Initiatives

- **Adapt and Employment**
  Mr H. Quigley, DG V
  Tel: +32 2 295 63 58
  Fax: +32 2 296 97 70
- **SME Initiative**
  Marius Camhis, DG XVI/A-2
  Tel: +32 2 295 71 01
  Fax: +32 2 296 32 73

III. Structural Fund Activities



A special 16-page report on the EMPLOYMENT Initiative. Catalogue No: CE-88-95-824-EN-C.

Of the many activities carried out under the European Commission's four Structural Funds (see Box), several involve education and training for technology-based companies.

The European Social Fund (ESF), for example, is the EU's main tool for developing human resources and improving the working of the labour market throughout the EU. Nine percent of its budget is channelled through the EMPLOYMENT and ADAPT Community Initiative Programmes.

These Programmes emphasise transnational and innovative approaches to generating employment and developing human resources. The **EMPLOYMENT** Initiative targets groups who face specific difficulties in the labour market: unqualified people under 20 years of age (the EMPLOYMENT-YOUTHSTART scheme), women (NOW) and disabled people and disadvantaged groups

(HORIZON). Some actions include job creation measures focusing on innovative ways to develop new enterprises.

ADAPT, on the other hand, specifically aims to improve the adaptability of the labour force by anticipating the changing skills and qualification needs arising from industrial change. It is targeted at workers at risk of unemployment due to these changes, those who have been given notice of redundancy and so on. In total, nearly 600,000 people will benefit from the Programme.

How can ADAPT help a company survive large-scale industrial restructuring? Among its many activities, ADAPT can:

- help groups of firms identify the implications of changes in their environment and set up business plans to cope;
- support the development and supply of training schemes related to new qualifications;
- assist SMEs with training programmes;
- train entrepreneurs and managers to adapt and design business plans, particularly in SMEs;
- set up networks to analyse labour market trends and skills requirements;
- support local employment development.

Lastly, many Community Initiatives are linked to the European Regional Development Fund, and all involve training in one form or another. There is not enough space to detail them all here, but of particular interest to small European companies is the new SME Initiative.

This aims to stimulate SMEs, particularly in Objective 1 regions, to adapt to the Single Market and ensure that they become internationally competitive. Priority areas include improving production systems and SME organisation, introducing environmental and energy efficiency considerations, promoting co-operation between SMEs and other organisations (e.g., research centres, subcontractors, producers, etc.), facilitating access to new markets, and more.

Context

Structural Funds

The European Commission operates four Structural Funds, all aiming to strengthen cohesion within the EU by encouraging more balanced economic and social development:

- the European Regional Development Fund, which aims to reduce differences in the levels of development between the EU's regions;
- the European Social Fund, responsible for improving employment prospects in the Community;
- the European Agricultural Guidance and Guarantee Fund, Guidance Section, which part-finances national aid schemes for agriculture and helps develop and diversify rural areas;
- the Financial Instrument for Fisheries Guidance, which assists in restructuring the fisheries sector.

Most (around 90%) of the funds are spent through the "mainstream" method, which involves Community Support Frameworks and Single Programming Documents. These are negotiated between the Commission and individual Member States on the basis of national or regional plans.

The rest are channelled through 13 Community Initiatives, which aim to help solve problems at a European level. The 'Industrial Change' group of seven initiatives includes EMPLOYMENT, ADAPT and SMEs as well as Initiatives aimed at the economic conversion of areas dominated by industries in transition (coal, steel, defence, textiles and clothing). The other Initiatives focus on EU frontier and remote areas, rural development, depressed urban areas, the fishing industry and so on.

An invaluable source of information on the Structural Fund initiatives. 104 pages, nine languages, 7 ECU from EUR-OP Sales Agents. Catalogue No: CM-84-94-056-X-C (where X is the two-letter language code).

Six Objectives, 13 Initiatives

Both the Community Initiatives and the mainstream activities share the same six Objectives:

- **Objective 1:** promoting the development and structural adjustment of regions whose development is lagging behind;
- **Objective 2:** converting regions seriously affected by industrial decline;
- **Objective 3:** combating long-term unemployment and facilitating the integration into working life of young people and of persons exposed to exclusion from the labour market; promoting equal opportunities;
- **Objective 4:** facilitating the adaptation of workers to industrial changes and to changes in production systems;
- **Objective 5:** promoting rural development by:
  - (a) speeding the adjustment of agricultural structures in the framework of common agricultural policy reform;
  - (b) facilitating the development and structural adjustment of rural areas.
- **Objective 6:** promoting the development and structural adjustment of regions with an extremely low population density.

► TASK FORCES UPDATE

Priority Actions Proposed

Commissioner Cresson highlighted the role of the new Industrial Task Forces in European RTD at BRITE-EURAM '95, held in Vienna last October.

Speaking at BRITE-EURAM '95, Edith Cresson, European Commissioner responsible for Science, Research and Development, emphasised that "... the Commission must further perfect its research policy in two directions: targeting resources and co-ordinating efforts. This is the goal of the Task Forces, launched earlier this year."(1)

BRITE-EURAM '95 was held to help prepare potential proposers for the second Industrial Technologies Call for Proposals, published last December. Plenary sessions covered new EC RTD strategies in areas such as increased project flexibility, environmental aspects and SME participation. One significant policy announcement was that the 7 MECU 'ceiling' on EC funding for each project has been lifted. There was also a Proposers' Forum to help participants find partners, as well as overviews of the latest trends in manufacturing and design technologies and information on the EC's technology transfer initiatives.

Setting Priorities

A week later the EC began discussing the possibility of giving five Task Forces priority access to the 700 MECU 'reserve fund' of the Fourth Framework Programme, which may be released in the middle of this year. These Task Forces cover the Car and Aircraft of the Future, Intermodal Transport, Multimedia Education Software and the recently announced Task Force for Water-Related Problems (see Box).

Of them all, the Aircraft Task Force is probably the most advanced. The 'mirror group' of industrial representatives has identified three priority research areas.

"We must minimise the cost of design and production by making it easier for European companies to work together. This requires better concurrent engineering, communication networking and CAD/CAM standards," explained Pierre Signargout, mirror group chairman. "Aircraft operating performance must also be improved, and we should concentrate on making them more environmentally friendly. The actual Action Plan, of course, goes into considerably more detail."

By October the Task Force had identified over 100 projects, recently launched under the first Call of the Fourth Framework Programme, which could contribute to these objectives. As *Innovation & Technology Transfer* went to press some of these projects were being grouped into around ten Clusters, each focusing on objectives such as concurrent engineering, emission control, aerodynamics and safety.

The EC plans to meet the costs of networking these projects together. In the longer term, the Task Force hopes to stimulate more co-ordination between national and EC research programmes and provide input for the next Framework Programme.

The other Task Forces are working along similar lines, with action plans published in October for the Task Forces for the Car of Tomorrow, Train/Railway Systems of the Future and Intermodal Transport.

These Task Forces have now identified the main issues underlying the evolution of their field, made an inventory of relevant RTD activities and published a detailed outline of proposed priority projects. Clustering is now underway, and a general progress report on the Task Forces is planned for February. □

(1) See edition 5/95, which includes contact information.

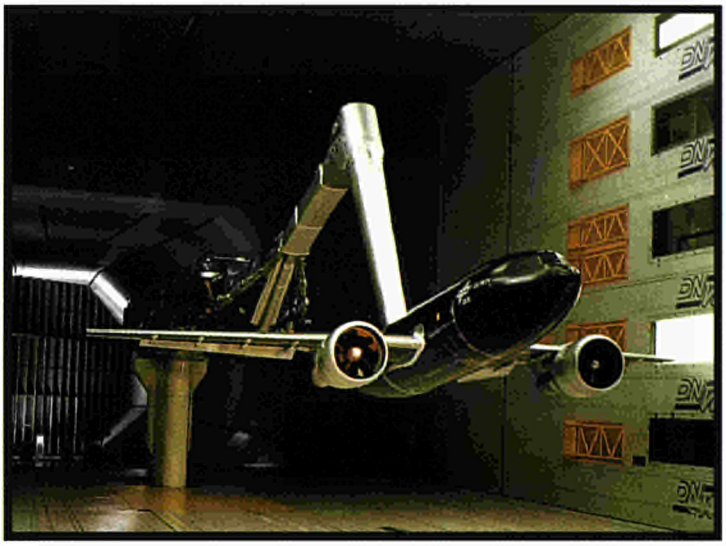


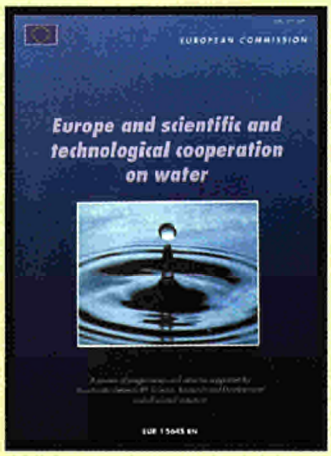
Photo: Daimler-Benz Aerospace

In phase II of the BRITE-EURAM project DUPRIN (Ducted Propfan Investigation), twelve partners from four countries tested more fuel-efficient engine designs and their effects on aerodynamics.

Seventh Task Force Proposed

The Task Force for Water-Related Problems will focus on four problem areas of major environmental and structural importance:

- **water and wastewater treatment;**
- **over-consumption and water re-use;**
- **structural water deficits;**
- **integrated river basin management (e.g., floods, pollution episodes).**



'Europe and scientific and technological co-operation on water', published in 1994. EUR 15645, 11.5 ECU

Contact
Mr B. Schmitz, DG XII
Fax: +32 2 296 31 93

This pullout introduces many sources of information on the EU's RTD Programmes, summarises useful brochures and explains how to obtain EC publications. It will be referred to extensively in future editions of *Innovation & Technology Transfer*.

Getting Started

The following brochures and journals are recommended as useful introductions to the EU's research activities.

■ **The Fourth Framework Programme**
44 pages (A5), 3 languages
A concise guide to the Fourth Framework Programme, its Specific RTD Programmes and the Joint Research Centre.
Contact: Information & Communication Unit, DG XII
Fax: +32 2 295 8220

■ **Community Research and Technological Development Policy**

EUR 15637, 36 pages, 5 languages
Sets the European research effort in context, covering rationale, history and overall results.
Contact: Information & Communication Unit, DG XII
Fax: +32 2 295 8220

■ **EC Research Funding: A Guide for Applicants,** 4th Edition
Currently in production in eleven languages. Covers the importance of EU RTD to the European Union, describes the project development process and summarises both the Specific RTD Programmes and related Programmes outside the Framework Programme.
Contact: Information & Communication Unit, DG XII
Fax: +32 2 295 8220

■ **EC-Funded Research and Technological Development *('Handling project proposals and contract negotiation')***
EUR 15462, 11.5 ECU, nine languages
Designed to make the European Commission's management of its RTD Programmes more transparent, this booklet covers the evaluation and selection of project proposals, contract negotiation and project management.
Contact: Information & Communication Unit, DG XII
Fax: +32 2 295 8220

■ **Spotlight on EU Research**
132 pages, EUR 16002, English & French, ECU 13.5
Includes an introduction to the EC's research programmes and 50 two-page articles, each profiling the results of one or more research projects, to give an impression of the achievements of EU research as a whole.

JOURNALS

■ **RTD Info**
Published bimonthly, in English,French and German, this 4-8 page newsletter briefly covers Calls for Proposals, conferences, publications and more.
Contact: Ms D. Fassone.
Fax: +32 2 295 8220

■ ***Innovation & Technology Transfer***
Published every two months in English, French and German by the EC's Innovation Programme, this 24-page magazine is of particular interest to the technology transfer community in industry, research institutions, universities and professional organisations. Each issue includes an in-depth Dossier article, articles on innovation policy and practice, European RTD-related policy issues, case studies of successful projects and more.

■ **I&T Magazine**
A full-colour quarterly covering information and telecommunication technologies, available in five languages. Dominated by in-depth discussion and accompanied by a News Review in English. The text is also accessible electronically over the ECHO server.
Contact:
EUR-OP
MER 193/195, I&T Magazine
2, rue Mercier
L-2985, Luxembourg

There are also several CORDIS-related publications (see overleaf). Lastly, contact the Specific RTD Programmes (see page 14) for their own newsletters and brochures.

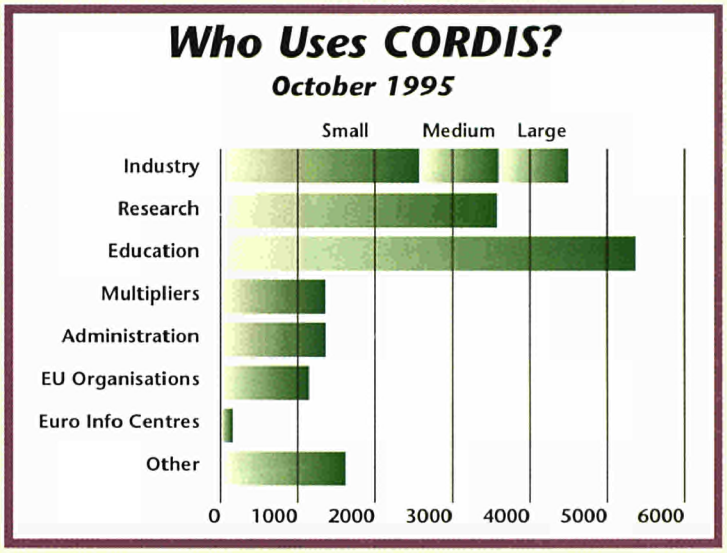
OBTAINING PUBLICATIONS

Generally, to obtain a publication or journal mentioned in *Innovation & Technology Transfer*:
- **unless mentioned otherwise, the publication or journal is free;**
- **a name and fax number is often supplied for obtaining the publication;**
- **if not, for any EC publication with a price listed in ECU, contact your nearest Sales Agent (see page 14);**
- **otherwise, the RTD Help Desk (see page 14) may be able to supply the document, or give you the right number for the person who can;**
- **lastly, note that the Catalogue number or 'EUR number' helps enormously in obtaining EC publications.**

CORDIS: EU R

CORDIS

The Community Research and Development Information Service - CORDIS - provi
CORDIS products include ten on-line databases, a CD-ROM service, paper-based pu



Most of the almost 20,000 CORDIS users are from the education, industrial and research sectors. SMEs dominate the industrial user group.

At the heart of CORDIS is a set of ten databases. They can be used to keep up to date with the latest developments, search for relevant publications, find research partners, learn of new prototypes, discover who is involved in different EC Programmes and much more.

The databases are:

■ **RTD-News:** the latest news on all aspects of EC RTD activities, including Calls for Proposals and Tenders, events, publications, Commission proposals, RTD-oriented legislation and more. In two versions: English (over 4,800 records) and German (over 1,500), with a French version planned to come on-line by the end of 1995 as *Innovation & Technology Transfer* went to press.

■ **RTD-Partners:** a partner search database detailing over 24,000 organisations seeking or offering themselves as partners for EC or other RTD projects. Open to contributions through e-mail and the WWW (see below).

■ **RTD-Programmes:** details on over 400 past and present EC RTD and related programmes.

■ **RTD-Publications:** contains abstracts and bibliographic details of over 68,000 publications, documents and reports arising from Community RTD.

■ **RTD-Projects:** provides detailed information on over 25,000 individual projects.

■ **RTD-Results:** details the potential market applications of results and prototypes from EC and non-EC programmes awaiting exploitation, as well as the kind of collaboration sought (e.g., licensing, manufacturing, etc.). Over 12,000 results covered.

■ **RTD-Comdocuments:** information on EC Communications to the Council and Parliament on RTD activities.

■ **RTD-Acronyms:** a guide to over 5,400 acronyms and abbreviations arising from EC RTD activities (excluding technical abbreviations).

■ **RTD-Contacts:** provides users with details of over 4,500 local, national and European-level contact points, which can provide them with information on EC research.

■ **RTD-Expressions of Interest (EOI):** detailed information on organisations and individuals wishing to participate in the Information Technologies and Telematics Applications Programmes. Open to contributions through an on-line form on the WWW (see below).

Apart from RTD-News and RTD-EOI (updated daily), the databases are regularly updated on a two-week cycle. The working language is primarily English.

On-Line Access

The CORDIS databases are carried by the European Commission Host Organisation (ECHO), which hosts about 30 on-line databases. Users with a PC and a modem can access them through PSDN and academic networks, the Internet or any telephone line. Access is free, apart from the telecommunication costs.

The most popular interface for accessing the databases in this way is **Watch-CORDIS**, a Windows-based program available from the CORDIS Help Desk, the CD-ROM and the WWW Server (see below). The user-friendly interface helps the user with each step of their search, providing pull-down lists of possible database field terms and allowing users to scan field indexes. Users can both query one database in detail and search through all ten databases

ACCESS SUMMARY

There are many ways of accessing CORDIS information.
If you have:

■ **no computer:** all EU member states have local organisations supplying CORDIS information, including the Innovation Relay Centres, chambers of trade and so on (contact the CORDIS Help Desk). In addition, there are the paper publications;

■ **computer, but no modem:** subscribe to the CD-ROM if you have a CD-ROM drive, or see above. Subscription: 250 ECU for four issues, or 100 ECU/issue;

■ **modem and packet switching connection:** NUA: +270 448112, 7 data bits, even parity, 1 stop bit (i.e., 7,E,1); +270 442125 (8,N,1);

■ **EuropaNet:** use the network +204-307-310099 (7,E,1);

■ **Internet: Telnet:** telnet to the host: echo.lu. A hyperlink is also provided from the WWW Home Page;

■ **Internet: World Wide Web:** the CORDIS Home Page: http://www.cordis.lu/;

■ **modem and telephone voice line:** dial up ECHO direct using standard communication software and/or Watch-CORDIS. Speed: 300-9600 baud; full duplex; (7,E,1); TTY or ANSI-BBS terminal emulation. Dial: +352 42 03 47;

■ **Videotex:** consult your Videotex Information Pages.

'D On-Line

s a centralised source of information on Community RTD. cations and material on the World Wide Web (WWW).

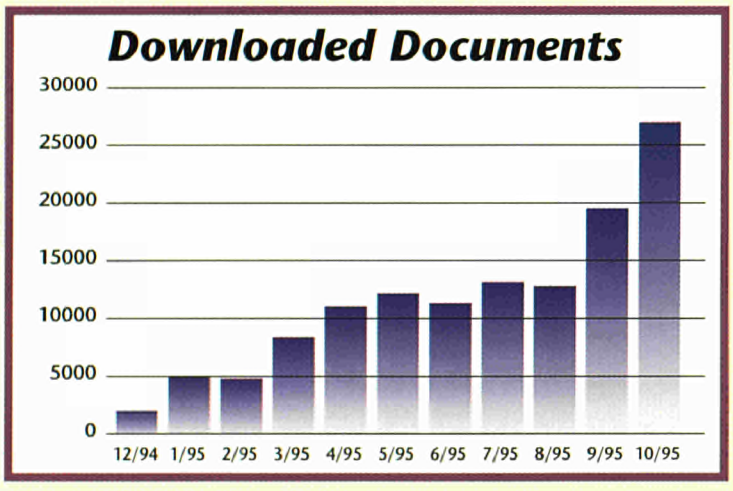
simultaneously. The queries can be prepared before connection, keeping data transfer costs to a minimum. Alternatively, users can also use ECHO's Common Command Language (CCL) to perform searches, as well as a simple menu-driven system.

Those with Internet access can telnet to the databases. Lastly, a forms-based interface on the World Wide Web (WWW) is being developed to allow direct database access using a suitable Web browser.

World Wide Web Services

The CORDIS WWW Server, in fact, already provides a great deal of useful information. Users can:

- download the Calls for Proposals, Work Programmes and Information Packages of the 20 Specific Programmes;
- electronically submit entries to the RTD-Partners and RTD-Expressions of Interest databases using either e-mail or on-line forms (e-mail: cordis-cp@lcd.co.uk);
- download Watch-CORDIS software;
- read about the Fourth Framework Programme and other EU-related RTD developments, such as the seven Industrial Task Forces;
- access general information on CORDIS;
- link to Home Pages for COST, ACTS, ESPRIT and the Innovation Relay Centre Network (all hosted by CORDIS) and other EC Servers such as I'M-Europe (European electronic information services market and multimedia contents industry) and DG XII (Science, Research and Development).



The number of documents downloaded from the CORDIS WWW Server had reached over 25,000/month after just eleven months of operation.

CD-ROM and Paper Publications

The CORDIS CD-ROM is distributed on subscription. Subscribers receive a CD-ROM containing the latest information every three months, incorporating a highly effective user interface.

There are also paper publications providing information selected from the databases. All are in English and are available from the RTD Help Desk (see page 14):

- **CORDIS *focus***

A fortnightly newsletter providing the latest items from RTD-News. Covers all aspects of EC RTD activities, including Calls for Proposals and Tenders. CORDIS *focus* Supplements are published 6-8 times per year on specific topics.

- **CORDIS *focus* RTD-Results**

A selection of items extracted from the CORDIS RTD-Results database, divided into eight sections . Published quarterly.

- ***Euroabstracts***

This selection from RTD-Publications, published six times a year, provides abstracts of around 300 RTD-oriented publications from the EC per issue. It also includes reviews and feature articles on EC RTD programmes and initiatives. An Annual Index provides a complete survey of the year's publications. 10 ECU/copy or 63 ECU/year.

FURTHER INFORMATION

Both CORDIS and ECHO run experienced, multilingual Help Desks. Contact them using the numbers below and ask for the Freephone number for your country.

■ CORDIS Help Desk
Tel: +352 3498 12 40
Fax: +352 3498 12 48
E-mail:
helpdesk@cordis.lu

■ ECHO Help Desk
Tel: +352 3498 12 00
Fax: +352 3498 12 34
E-mail: echo@echo.lu

■ CD-ROM Subscription
EUR-OP, OP4C-OFL
Tel: +352 2929 420 17
Fax: +352 2929 420 27

"CORDIS on CD-ROM is a glowing example of how [a user interface] should be done."
- Managing Information, Nov/Dec '94.

Contact Points

A number of other EC offices can also provide information on EC RTD.

Sales Agents

The Office for Official Publications of the European Communities, or EUR-OP, is the official publisher for the EU institutions. Its worldwide network of Sales Agents only handles publications which have a price listed in ECUs (although customers pay in local currency). Free RTD publications can be obtained from the relevant programme.

For details of your local Sales Agent:

- look in the back of almost any EC-sponsored publication;
- if this is not possible, send a fax to:

Mr W. Bray, EUR-OP
Fax: +352 48 85 73

The Innovation Relay Centre Network

Each of the 52 Innovation Relay Centres (see map) is dedicated to bringing Community RTD activities closer to local organisations, helping them both enter the RTD Programmes and exploit research results. The Calendar of Events can be obtained from:

- the WWW site;
- Marinella Sardo, DG XIII/D-3. Fax: +352 4301 34009;
- CORDIS in CCL mode: access RTD-News; type 'Info Calendar' for all of Europe or 'Info X' for the Calendar for country X.

Contact:
IRC Co-ordination Unit
Tel: +352 4301 34008
Fax: +352 4301 34009
WWW: http://www.cordis.lu/irc/home.html

Information Society Project Office

ISPO is the main point of contact between the Commission and the public and private sectors concerning the information society. It helps industry and users in the field make optimal use of existing EU instruments and resources, acts as a broker in information and ideas, creates awareness of the potential impact of the information society, addresses information society issues and helps launch relevant international actions. See *Innovation & Technology Transfer*, edition 1/95.

Contact:
Tel: +32 2 296 88 00 / 89 00
Fax: +32 2 299 41 70 / 80
E-mail: ispo@ispo.cec.be
Compuserve: 100137,370
World-Wide Web: http://www.ispo.cec.be

The Joint Research Centre

The Joint Research Centre (JRC) is a scientific and technical research centre established by the EC. The five research sites in Belgium, Germany, Italy, the Netherlands and Spain house the Institutes for Reference Materials and Measurements, Transuranium Elements, Advanced Materials, Systems Engineering and Informatics, Safety Technology, Remote Sensing Applications, Prospective Technological Studies, and the Environment Institute. See the Dossier in *Innovation & Technology Transfer*, edition 5/95.

Contact:
JRC Public Relations Office
Tel: +39 332 78 91 80
Fax: +39 332 78 58 18
WWW: http://esba-www.jrc.it/pubdocs_tmp/Welcome.html

OPET: Promoting Energy Technology

The OPET Network (Organisations for the Promotion of Energy Technology) includes more than 50 public and private organisations experienced in the energy sector across the EU, offering access to more than 2,500 experts from disciplines ranging from engineering to marketing.

Contact: Francoise Bosseler, OPET-CS
Fax: +32 2 771 56 11

Specific RTD Programmes

General information on each Specific Programme can be obtained by contacting (where available, e-mail is preferable):

PROGRAMME	CONTACT
Information Technology	IT Information Desk Fax: +32 2 296 8388 e-mail: esprit@dg3.cec.be
Telematics	Giangaleazzo Cairoli Fax: +32 2 296 8398 e-mail: telematics@dg13.cec.be
Advanced Communications Technologies and Services	ACTS Central Office Fax: +32 2 295 0654 e-mail: aco@postman.dg13.cec.be
Industrial and Material Technologies	BRITE-EURAM Help Line Fax: +32 2 295 8046
Standards, Measurements and Testing	Pierre Mériguet Fax: +32 2 295 8072 e-mail: helpdesk.smt@mhsg.cec.be
Environment and Climate	Environment Programme Fax: +32 2 296 3024
Marine Science and Technology	MAST Programme Fax: +32 2 296 3024
Biotechnology	Alfredo Aguilar Fax: +32 2 299 1860
Biomedicine and Health	Alain Vanvossel Fax: +32 2 295 5365
Agriculture and Fisheries	Liam Breslin Fax: +32 2 296 4322
Non-nuclear Energy	Michel Poireau Fax: +32 2 295 0656
Nuclear Fission Safety	Werner Balz (all areas except radiation protection) Fax: +32 2 295 4991 Jaak Sinnaeve (radiation protection) Fax: +32 2 296 6256
Thermonuclear Fusion	Regis Saison Fax: +32 2 296 4252
Transport	Wim A.G. Blonk Fax: +32 2 296 8350 e-mail: karen.saelens@mhsg.cec.be
Targeted Socio-Economic Research	TSER Central Office Fax: +32 2 296 6019

RTD HELP DESK

The RTD Help Desk can help in locating sources of information on EC research (e.g. publications and contact persons).
Contact:
RTD Help Desk, DG XIII/D-2
Fax: +352 4301 32084

► INFORMATION SOCIETY

Connecting Regions Together

Europe's regions have a lot to gain from the information society, as the first meeting of the Inter-Regional Information Society Initiative (IRISI) demonstrated.

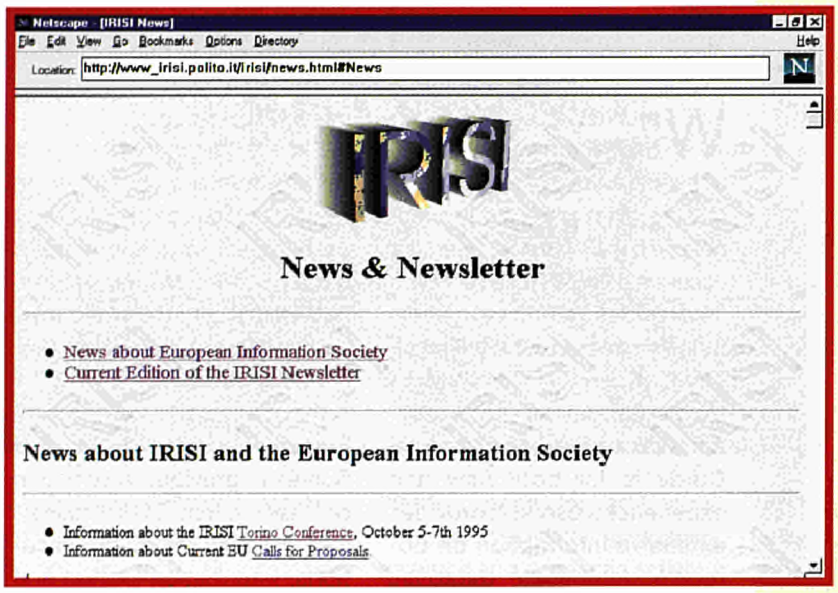
The six pilot regions[1] involved in IRISI have all experienced decline in their traditional industrial bases. They signed the IRISI Memorandum of Understanding[2] in November 1994 because they see the information society as an opportunity to renew their economic competitiveness, employment and quality of life.

They are pursuing a long-term, commonly developed approach to building the information society. Working in partnership with the private sector and key social and economic players, they are implementing new applications and services together and sharing the resulting experiences.

Their priorities are teleworking, distance learning, university and research centre networks, telematics services for SMEs, city information highways, telematics and health care. Both DG XIII (Telecommunications, Information Market and Exploitation of Research) and DG XVI (Regional Policy) of the EC are providing financial, technical and managerial support.

Building Partnerships

IRISI's first conference in Turin (Italy) last October was held to assess progress and plan for the future. It featured presentations on each region's strategies and action plans, as well as reports from the IRISI workgroups, which cover topics as diverse as awareness building, health care and tourism. Proceedings are now available.



Further information can be found on IRISI's World Wide Web Home Page.

Michel Carpentier, the then Director-General of DG XIII, was one of several to use telepresence technologies to address the conference remotely. "The information society presents Europe's regions with real opportunities and challenges," he argued. "The Commission is setting the scene ... What is missing at the moment is the establishment of a competitive environment, but this is changing very quickly."

The role of regions was, naturally, a recurring conference theme. Erika Mann, member of the European Parliament's Committees on External Economic Relations and on Research, Technological Development and Energy, stressed the importance of the regional level for managing the process of change effected by our moves towards an information society.

"It is at the regional level that we can create and design new opportunities, develop a sense of security, learn from each other and leapfrog into the future," she emphasised. "The new confidence required for tomorrow's economy will grow out of the region."

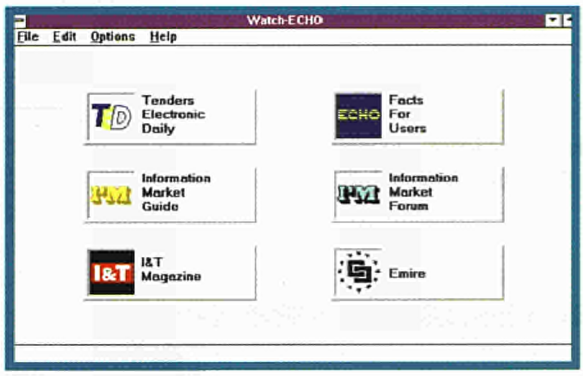
A Round Table discussion helped summarise the potential barriers to progress identified by the regions. These include the need for financing, especially in relation to the exploitation of technologies for SMEs, and the urgent need to put in place appropriate mechanisms to ensure data protection and technical inter-connectivity. The priorities for the regions, as demonstrated at Turin, are awareness building and establishing trust in new technologies. Crucially, overall disparities in technological development within and between regions must be avoided. □

(1) Sachsen (Germany), Valencia (Spain), Nord-Pas de Calais (France), Central Macedonia (Greece), Piemonte (Italy) and the North West of England (UK).
(2) Available for download from IRISI's WWW Home Page.

Contact
IRISI Network Bureau
Tel: +32 2 280 02 34
Fax: +32 2 230 48 75
E-mail: netburo@pophost.eunet.be
WWW: http://www_irisi.polito.it/

► ON-LINE INFORMATION

Watch-ECHO Launched



Watch-ECHO: easy access to ECHO databases.

(1) See the Quick Reference Guide, this issue.
(2) The Watch interface, together with its manual, can be downloaded from the World Wide Web: http://www.echo.lu/echo/wecho/en/wecho.html

Contact
ECHO Help Desk
(ref: Watch)
Tel: +352 34981 200
Fax: +352 34981 234
E-mail: echo@echo.lu

Watch-ECHO's Windows-based software includes all the useful search and retrieval features that are already available with the Watch software for accessing the CORDIS service(1). It provides graphical, user-friendly access to the following ECHO (European Commission Host Organisation) databases:

■ the **Information Market (I'M) Guide** is for both new and experienced users. It provides extensive information on Europe's databases, database producers, CD-ROMs and information brokers.

■ **I'M Forum** is for specialists in the European information market. Companies, individuals and their associated expertise are listed - facilitating joint ventures and partner searches for EC programmes.

■ **News Online** contains two electronic newsletters:

• the ECHO Facts for Users Archive is based on a quarterly newsletter covering the latest ECHO developments and related technical issues;

• the I'M News Archive is a valuable source of information on the information market, including the European language industry.

■ the quarterly **I&T Magazine**, covering information and telecommunications technologies, contains two sections:

• the main part - in English, French, German, Italian and Spanish - provides information on initiatives from DG III (Industry) and DG XIII (Telecommunications, Information Market and Exploitation of Research);

• a supplement - published in English only - contains information on programme implementation.

■ **Tenders Electronic Daily (TED)** - the on-line version of Supplement S to the Official Journal of the European Communities - contains invitations to tender for public contracts (works, supply and services) from over 80 countries. Documents are available on the morning of their publication - providing users with a considerable lead over readers of the printed version.

■ **EMIRE** is a multilingual introduction to national employment law and industrial relations systems throughout Europe. It provides clear contextual explanations of specialist terms.

Watch-ECHO is available on diskette(2) and CD-ROM. The latter, which costs 50 ECU, also includes the I'M Guide and EMIRE databases for off-line searches. A list of retail points is available from the ECHO Help Desk. □

► ENERGY POLICY

A Competitive Framework

According to a 128-page EC Green Paper, entitled 'For a European Union energy policy', the Community needs a "common vision" to meet the challenges facing the supply, production and consumption of energy over the next 20 years and to ensure the consistency of mutual energy policies around agreed common objectives.

The Green Paper identifies "gaps and deficiencies" in current policy and finds, in particular, that despite "a clear need to reinforce the level of concerted action and co-operation ... the framework and mechanisms for it are missing." The Green Paper recommends that a future framework for the energy sector must accommodate continuing changes with a competitive approach.

To this effect, the Green Paper recommends close co-ordination of national regulators of energy networks at the Community level "to ensure a common approach to the concept of general economic interest." According to the EC, security of supply is an important priority and "only a global approach to the imperatives of security of supply would allow an appropriate response at a reasonable political and economic cost."

On the environment, the Green Paper recognises the "considerable progress" made in combating pollution and the "mutual benefit" of transferring energy saving technologies to the third world. Nevertheless, the Green Paper stresses the need to do this without weakening the quality of economic development in the countries involved.

In its Green Paper, the EC clearly seeks to redress what it calls "the absence of clear responsibilities for energy policy at Community level". As *Innovation & Technology Transfer* went to press, a White Paper was in preparation to address these issues.

For copies of both the Green and White Papers, contact your nearest EUR-OP Sales Agent (see the Quick Reference Guide, this issue). □

► CONFERENCE

Evaluating Interaction

What do science and technology contribute to the development of human society? How should collaborative research be administered?

These questions were the foci of the COST(1) Interaction conference which was held in Basel last October. Three parallel symposia addressed:

- the **Reasonable Exploitation of Earth's Resources** - worldwide diffusion of low energy technologies was seen as a key factor in attaining the desirable but elusive goal of sustainable development. Participants showed increased optimism in renewable energy sources;
- the **Development of New Processes, Products and Services** - nanotechnology was a recurring topic. Exciting new possibilities exist for interaction between physicists, engineers, chemists and biologists;
- the **Human Dimensions of Science and Society** - concern was expressed over the divergence between scientific knowledge and the general public's knowledge of science. Participants emphasised the need to communicate the human face of scientific research in areas such as ageing and improvements to the workplace.

An example of COST's ability to foster multinational, multidisciplinary solutions to human problems is the collaboration between COST 230 - Stereoscopic Television - and the European network of scientists from COST's Medical Actions umbrella. As a result of the conference, scientists will work together to improve the interpretation of brain scan (PET) images.

As well as sharing scientific experiences, achievements and ideas, the 600 or so participants were there to discuss COST's priorities and plans for the future - although no decisions will be taken until COST's Ministerial Conference in Prague later this year. The chairman, former French Minister for Research and Space, Professor H. Curien, praised the efficiency of COST's 'bottom-up' approach, whereby project generation and participation are governed by the needs of its members.

The COST 821 Network - arbuscular mycorrhiza in sustainable soil/plant systems - is helping to establish new and more ecologically balanced approaches to plant production. Mycorrhizal fungi naturally enhance soil conservation, nutrient transformation and uptake, and plant development and protection.

Forging Links

Professor R. Ernst, Nobel Prize-winner for Chemistry in 1991, called for more involvement of non-European countries to enhance COST's collaborative effort in global issues. In addition, he commended the Swiss example of earmarked funds for COST projects. A strong supporter of the 'bottom-up' approach, Professor Ernst also wanted to see institutional links between COST, EUREKA and the European Science Foundation.

Professor J. Routti, the new Director-General of DG XII (Science, Research and Development) which partly funds COST's co-ordination expenses, also recognised the success of the 'bottom-up' approach. He identified a need for additional "vertical integration breaching research and economic activity, providing stronger links between science and industry and ... between science and policy making" and identified "a need for interaction between COST and other programmes within the Community".

He cited the Framework Programme and the more industrially oriented EUREKA Initiative as examples. This, he felt, would help to address global policy issues with a broad range of fundamental research projects and effective exploitation of their results.

Finally, COST may establish a 'reflection group' of senior scientists to suggest new ideas and possible directions. □

(1) COST: the French acronym for European Co-operation in the field of Scientific and Technical Research. See the Dossier of issue 6/94.

Contact
Dr B. Reichert,
Cost Secretariat,
European Commission
Tel: +32 2 295 46 17
Fax: +32 2 296 42 89
E-mail:
B.Reichert@mhsg.cec.be
WWW: http://www.cordis.lu/cost/home.html

► TECHNOLOGY TRANSFER PROJECTS

Co-ordinated Dissemination

Three technology transfer projects on urban water management were successfully 'clustered' together in a co-ordinated diffusion action last June.

THE INNOVATION PROGRAMME IN BRIEF

The Innovation Programme implements the Third of the four Activities of the Fourth Framework Programme (1994-1998). It is devoted to disseminating and exploiting research results, and selectively builds upon the earlier VALUE and SPRINT Programmes (see Dossiers, editions 1/94 and 2/94). It is run by DG XIII/D. See edition 1/95 for a brief profile.

Contact

■ Unit D-1: technology transfer and validation projects, JRC liaison, intellectual property
Fax: +352 4301 34129
■ Unit D-2: Community Information and Dissemination Service
Fax: +352 4301 34989
■ Unit D-3: Relay Centres and other services
Fax: +352 4301 34129
■ Unit D-4: innovation policy, regional aspects, financing, EIMS
Fax: +352 4301 34544

Contact

■ Ms R. Brown, Forbairt
Tel: +353 1 837 01 01
Fax: +353 1 837 96 20
■ Mr I. Paterson, Haiste Kirkpatrick International
Tel: +44 113 237 40 73
Fax: +44 113 262 07 37

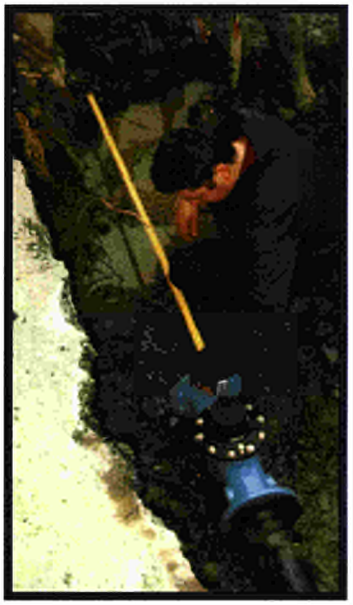
Many cities' systems of sewers and drains were designed decades or even centuries ago. Urban growth and increasing water use are now putting these ageing systems under extreme pressure. The results are familiar to many: water leakage and system overload, leading to summer water shortages, winter street flooding and even sewage plant overflows.

The three technology transfer projects, all supported by the now completed SPRINT Programme (see page 20), were launched a few years ago to disseminate and validate successful urban water management strategies around Europe:

■ SP 098: applying the British 'Wallingford Procedure' for analysing sewage networks to pilot catchments in eight countries;
■ SP 226: introducing simulation models for cost-effective control of pollution and wastewater plant loading in seven countries;
■ SP 257: combining modelling and field measurements to reduce water leakage in five countries.

Each technology transfer project includes a phase to disseminate the results to an even wider audience. According to Renee Brown of Forbairt(1), "it was a natural decision to cover these three projects in one conference, because the technologies benefit the same groups - local authorities, civil engineers, architects and so on."

The conference was held in Dublin on June 22-23. Although the event was promoted primarily in Ireland and the UK, it attracted interest from around Europe, and was oversubscribed with almost 100 delegates.



Installing a monitoring meter during the SP 257 pilot project in Dundalk (Ireland).

Reducing Water Losses

Ian Paterson of Haiste Kirkpatrick International, project leader of SP 257, was one of them. "We've developed a methodology to locate leaks which makes better use of existing equipment, keeping costs down," he explains. "The original project was for two pilots in Greece and another in Spain, but it was extended to another four locations in Germany, Portugal and Ireland".

In each case a computer model of the water network was developed. A series of field measurements then validated the model, allowing the authorities to locate anomalies and areas of high leakage. Finally, a highly structured field search found the exact problems.

The pilot project in Madrid, for example, covered 50,000 properties. The system there is new, so water leakage was already low (17%). The project reduced this further and cut the cost of controlling leakage by 30%. The Madrid authorities have now decided to extend the scheme to a further 200,000 properties.

Similarly, another pilot scheme has saved a town in the former East Germany 100,000 ECU a year in water losses, while the aim in the two Irish locations is to reduce their 60-70% loss rates to around 25%.

For Mr Paterson, SP 257 opened new markets for the company. "We held Open Days in each country to disseminate the methodology to other areas," Mr Paterson concludes. "In Ireland, for example, the two projects were for a town and a rural region, so we were able to demonstrate how our system can tackle different environments. As a result, we've just won a further two contracts, and people are going to see improved water services." □

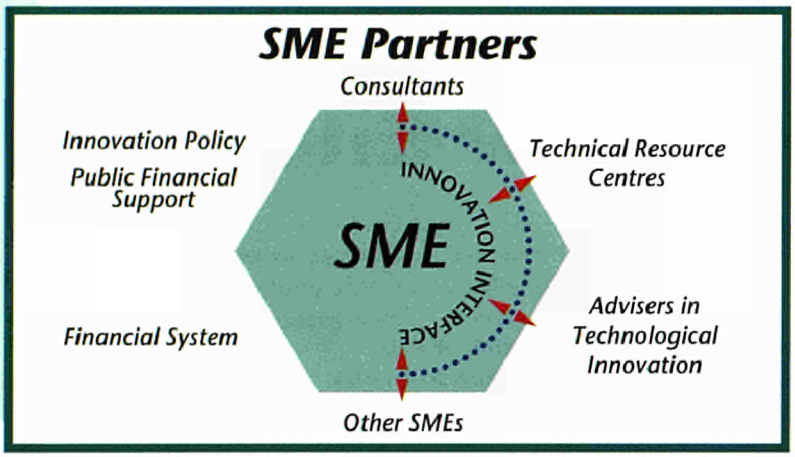
(1) Ireland's agency for promoting science and technology to Irish industry, Forbairt also hosts the country's Innovation Relay Centre.

► INNOVATION POLICY

Final Evaluation of SPRINT

A report on the final evaluation of the SPRINT Programme has been approved by the European Commission. The evaluation, carried out by a panel of external experts, both analysed SPRINT's philosophy and reviewed the Programme's actions, and reinforces the view that the 'SPRINT system' has a role to play in the EC's innovation actions.

"SPRINT's first credit has certainly been to acknowledge that the innovation process relies upon a variety of SME partners and to foster the emergence of innovation services ... SMEs are in the centre, surrounded by the six main types of SME partners."
- the Evaluation Report.



Innovation policy revolves around multiplying interactions between the various 'innovation actors' and guaranteeing the completeness, complementarity and coherence of the measures undertaken for their benefit. The danger of such a policy is to focus on one element of the system while ignoring others.

In tackling its overall objectives - developing SME-oriented innovation policies - SPRINT avoided this danger by successively investigating all possibilities for supporting innovation. The principle of the 'SPRINT system' - implemented by trial and error - is that each action is only significant because it is one element within a broader policy.

As a result, the Commission developed a useful tool for reflection, experimentation and decision making in innovation policy. SPRINT devised a range of tools to tackle complex, innovation-related problems. The Programme was also recognised by actors in the field as an essential, pan-European meeting ground, allowing all to learn from each other's achievements and experiences.

A Successful Approach

In essence, SPRINT:

- tackled the problems of innovation in all its aspects, including financial issues;
- combined reflection and action, experimentation and evaluation;
- generated some "models for action" for private and public innovation policy makers;
- created real European communities of experts in professional spheres where they did not previously exist.

Like any Programme, particularly one with an experimental character, SPRINT also had weaknesses:

- a certain helplessness in publicising its global working processes, resulting in low overall visibility;
- poor dissemination of results from specific actions, such as European Innovation Monitoring System (EIMS) studies, reduced their impact;
- the catalytic role for regional or national-scale innovation actions was insufficient;
- there was too little interaction with other services of the Commission, though influencing the definition of other Programmes makes up one of the major objectives of a horizontal policy.

The root of most of these weaknesses was, it appears, a lack of personnel, as SPRINT could only provide personnel commensurate with the budget. However, the SPRINT Programme's impact derived not just from its budget, but from the expertise of its personnel. One response - spending the same resources on fewer actions - would have undermined SPRINT's systematic approach.

Seven Action Lines

SPRINT's seven main lines of action were also reviewed and briefly assessed:

1. Networks: SPRINT was instrumental in forming 'macro networks', linking together regional technology advisory centres, contract research organisations, venture capitalists and so on across Europe. The valuable capabilities of these now independent associations should be made more available to other Commission services dealing with SMEs.

'Mini networks' - Research and Technology Organisation (RTO) networks and Inter-firm technology transfer networks - helped bring a European dimension to a total of 650 intermediaries around Europe. The added value was particularly strong in less favoured regions.

2. Science parks and regional infrastructures: the science park consultancy scheme helped consolidate and enlarge the European science park movement and develop a community of experts in the field. Regional initiatives (RITTS and RTP) are a fundamental aspect of innovation policy and are now demonstrating their relevance for improving local innovation and technology transfer infrastructures.

3. Finance for innovation: investment fora have been more successful than the Technology Performance Financing (TPF) scheme, which has since been remodelled to meet requirements and increase its flexibility, resulting in some new contracts.

4. Innovation management techniques: this includes the Management of New ●●●

Technologies (MINT) initiative and the promotion of value analysis, quality and industrial design. MINT has generated a community of European consultants and a pan-European methodology for helping firms innovate. Communicating the results and activities of all these initiatives was good but needs improvement.

5. Technology Transfer Days: these have been very effective at crystallising technology transfer agreements. The inter-sectoral dimension of these 'TTDays' should be conserved and reinforced.

6. Specific projects: these large-scale experimental projects - 21 in all - have, in most cases, helped adapt and transfer proven technologies from one region or sector to another. They provided important lessons for future diffusion actions (several guides[1] have now been published), but the dissemination of results to organisations outside the projects could have been improved.

7. European Innovation Monitoring System: EIMS filled an important place in the SPRINT system by providing a basis for developing knowledge on both the innovation process at SME level and the operation of policy measures to foster innovation. In the future, EIMS should benefit other Commission services as well as the policy-making community as a whole.

In conclusion, the panel considered that both the overall working process and the actions which were carried out by the SPRINT programme should be taken on and even amplified in the Innovation Programme. □

(1) See edition 6/95, 'A Growing Portfolio'.

► CALL FOR PROPOSALS

Promoting New Energy Technology

A Call for Proposals for a new OPET network was being defined as Innovation & Technology Transfer went to press.

The network of Organisations for the Promotion of Energy Technologies (OPET) was originally established by the THERMIE Programme (1990-1994) to demonstrate and disseminate innovative energy technologies[1]. These activities have now been integrated into the new Non-Nuclear Energy Programme (JOULE-THERMIE).

Due to its focus on dissemination, however, the OPET Network is being followed up under the Innovation Programme, in collaboration with JOULE-THERMIE. As *Innovation & Technology Transfer* went to press the Call for Proposals was provisionally planned for December 15, 1995.

The main aim of the OPET Network is to foster the market penetration of new and innovative European energy technologies, particularly those related to JOULE-THERMIE and its predecessor programmes. Working in co-ordination with the Innovation Relay Centre Network, the OPET Network will:

- act as a liaison between the Commission and the market actors at local and regional level;
- supply information on new and innovative energy technologies and the relevant EU programmes;
- develop and implement regional strategies for promoting energy technologies;
- provide easy access to energy expertise.

Although there is no 'standard model', each OPET will be a well-established organisation with expertise in promoting energy technologies. The Network is anticipated to involve around 35 OPETs, and, assuming the Call was published in December, the contracts should be signed in the summer of 1996. □

(1) See edition 3/95 for a Dossier on EU renewable energy programmes.

Promoting energy technologies: a joint action of the Innovation Programme and DG XVII (Energy).

Contact
Innovation Programme,
DG XIII/D-3
Fax: +352 4301 34129

► SCIENCE PARKS

Validation Initiatives Proposed

The Innovation Programme's Call for Proposals(1) to support Europe's science parks closed on the 15 September. Following an expert evaluation of the 82 proposals received, 39 proposals have been identified as being eligible for funding in principle:

- 25 proposals for the Validation Scheme to set up new initiatives or help existing ones;
- 7 for the Auto Evaluation Scheme to help mature initiatives introduce evaluation and monitoring techniques;
- 7 for Accompanying Measures concerned with professional and methodological support to the scheme.

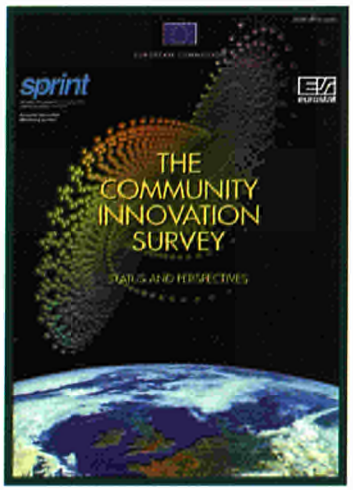
The total funding requested is 2,545 MECU.

(1) See edition 4/95.

Contact
DG XIII/D-4
Fax: +352 4301 34544

► EIMS

Monitoring Innovation



The European Innovation Monitoring System (EIMS) produces a steady flow of reports identifying, qualifying and quantifying the results of innovation policy and technology transfer.

As *Innovation & Technology Transfer* went to press, its portfolio contained 23 titles on seven key issues:

Innovation Policy

- An Integrated Approach to European Innovation and Technology Diffusion Policy: a Maastricht Memorandum, 1993
- Public Measures Supporting New Technology Based Firms: Workshop Proceedings, 1994
- Policies to Support Tacit Knowledge Transfer: Workshop Proceedings, 1993
- Public Measures to Support the Clustering and Networks of Innovative SMEs: Workshop Proceedings, 1995

Empirical Studies

- Innovation Activities and Industrial Structure: Industry and R&D in a Comparative Context, 1993
- Investment, Innovation and Competitiveness: Sectoral Performance within the Triad, 1993
- Patterns of Innovation in Italian Industry, 1993
- Innovation Structures and performance in Nordic Manufacturing Industry, 1993
- Technological Diffusion, Productivity and Competitiveness: An Empirical Analysis for 10 Countries
  - Part 1: Technology Diffusion Patterns, 1993

Innovation in Firms

- Knowledge-Intensive Business Services. Users, Carriers and Sources of Innovation, 1995
- Innovation Strategies of Europe's Largest Industrial Firms, 1995

Finance

- European Second-Tier Markets for NTBFs, 1994 (100 ECU, ISBN 1-898975-02-7)*
- Securitisation of Guaranteed SME Loans in Europe and Finance for Innovation, 1995 (100 ECU, ISBN 1-898975-04-3)*
- Potential Market for Initial Public Offerings (IPOs), 1995

Innovation and Technology Transfer Supporting Infrastructures

- Quality Promotion in Europe. A Review of European Community Member States' National and Regional Schemes and Measures in the Field of Quality, 1994 (£48, ISBN 0-566-07512-1)*
- The Future of Research and Technology Organisations in Europe: Conference Proceedings, 1994 (66 ECU, ISBN 92-826-8451-2)**
- Good Practice in Managing Transnational Technology Transfer Networks, 1995
  - Volume 1: Subject Papers
  - Volume 2: Case Histories
  - Executive Summary
- Survey of the Innovation Infrastructure in Central and Eastern Europe, 1994
- Technology Brokers in Europe, 1995
  - Volume 1: Technology Brokers in Europe, Summary
  - Volume 2: Technology Brokers in Europe, Summary and Country Reports
  - Volume 3: Directory
- Technology Demonstration and Application Centres in the European Union, 1995
  - Volume 1: Empirical survey 1994 and Workshop proceedings
  - Volume 2: Country reports on the EU, USA and Japan

Evaluation

- Evaluation of the Community Innovation Survey (CIS) - Phase I, 1995

Regional Aspects of Innovation

- Innovative Regions? A Comparative Review of Methods of Evaluation of Regional Innovation Potential, 1995
- Surveys of Regional Innovation? A Feasibility Study for Europe, 1994

Unless marked otherwise, these 50-100 page reports are available free of charge from the EIMS.

**Available from bookshops.*
***Available from EUR-OP Sales Agents (see Quick Reference Guide, this issue).*
In both cases, quote the ISBN number.

Contact
EIMS,
DG XIII/D-4
Fax: +352 4301 34544

► RADIATION PROTECTION

Becquerel's Legacy

One century after the discovery of radioactivity, the EC's Radiation Protection Programme is keeping up to date with world-class collaborative research.

Contact
Dr J. Sinnaeve, DG XII/F-6
Tel: +32 2 295 40 45
Fax: +32 2 296 62 56
E-mail: jette.pedersen@mhsg.cec.be

Radioactivity was discovered in 1896 by French physicist H. Becquerel(1). Fears of possible radiation injury led to the establishment of national radiation protection bodies shortly afterwards. The Radiation Protection Programme stems from the Euratom Treaty signed in 1957 - making it one of the first examples of pan-European collaborative research.

Nuclear energy represents a significant proportion of Europe's total energy production and is likely to continue to do so in the future. As the nuclear reactor accident at Chernobyl(1) ten years ago clearly demonstrated, radioactive hazards are not confined to national boundaries - hence the real need for effective transnational measures such as those co-ordinated by the Radiation Protection Programme.

Chernobyl, 1986: the world's worst nuclear disaster.

State-of-the-Art Research

According to the latest independent evaluation(2), the Radiation Protection Programme is acknowledged worldwide for its state-of-the-art research. Within the Fourth Framework Programme (1994-1998), this research continues under Sectors D and E of DG XII's Specific Programme for Nuclear Fission Safety (see Box).

The new Radiation Protection Programme supports fewer projects than previously but offers greater funding. It focuses on:

■ **Radiological Impact on Man and the Environment** - shared-cost R&D projects examine three areas: understanding radiation mechanisms and epidemiology, evaluation of radiation risks and reduction of exposures. Concerted actions address hereditary effects, radiation field analysis in the workplace, radon (sources, pathways, countermeasures) and much more;

■ **Mastering the Events of the Past** - in addition to the ten specific actions and 16 projects initiated after Chernobyl, new activities may examine contamination in the vicinity of the Mayak nuclear facility (Russia) and weapons test sites in Siberia and Kazakhstan. These projects cover the recognition and amelioration of health effects, restoration of severely contaminated territories, management and disposal of radioactive waste, and emergency management approaches.

The Nuclear Fission Safety programme set two deadlines for its first Call for Proposals. The projects resulting from the first deadline (20 March) were allocated about 70% of the available funds and started work at the end of last year. The second deadline(3) falls on 28 February this year, giving organisations from the new EU states (Sweden, Finland and Austria) additional opportunities to propose projects. Furthermore, proposals for concerted actions can be submitted at any time until 1 November, 1997 □

(1) For related conferences, see opposite page.
(2) 'Evaluation of Radiation Protection Action (1990-1991 and 1992-1993)', Research Evaluation Report No. 64, EUR 15878, 13.5 ECU. English (executive summary in nine languages).
(3) For a list of research fields and topics to be covered by the second phase of the Call, consult the 15 December issue of the Official Journal of the European Communities.

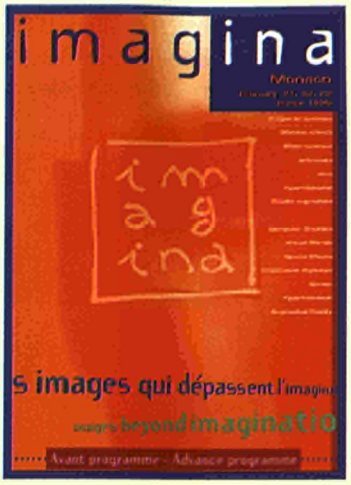
Nuclear Fission Safety in Brief

Five sectors covering Reactor Safety, Waste Management and Radiation Protection:

A) **Exploring Innovative Approaches:** safety assessment of reactors and fuel cycles. (6.3 MECU);
B) **Reactor Safety:** preventing radioactive release under severe accident conditions. (29 MECU);
C) **Radioactive Waste Management and Disposal and Decommissioning:** nuclear waste and dismantling of installations (37.8 MECU);
D) **Radiological Impact on Man and the Environment:** quantifying radiation exposure risks (43.4 MECU);
E) **Mastering Events of the Past:** scientific support to contaminated sites, notably in the former Soviet Union (10.5 MECU).

► CONFERENCES

IMAGINA '96
21-23 February, Monaco



The 15th edition of Imagina, co-sponsored by the EC's MEDIA Investment Club, is an international conference and exhibition specialised in computer-generated images. Attendees include feature film professionals, software and hardware manufacturers, publishers and university researchers.

The aim is to highlight and raise awareness of the latest research and production applications of cutting-edge computerised visualisation technology. Themes include digital creation, animation and interaction, virtual realities and communities, cyber-navigation and cyber-Earth: the global virtual city.

Contact: Brigitte Saramitto, OCM
Tel: +33 93 15 93 94; **Fax:** +33 93 15 93 94
WWW: http://www.ina.fr/INA/Imagina/index.en.html

EUROPE-ASIA: SCIENCE AND TECHNOLOGY FOR THEIR FUTURE
26-29 March, Engelberg (Switzerland)

This seventh 'Engelberg Forum', which will be presided by Commissioner Edith Cresson, is being organised in collaboration with the European Commission, the European Science and Technology Assembly (ESTA), the European Round Table of Industrialists, the European Science Foundation and the Swiss-Asia Foundation.

The theme - 'Europe-Asia: Science and Technology for their Future' - responds to the growing interest in industrial, scientific and economic circles in understanding the remarkable growth of the Asian economies and in the consequences. The event will provide an opportunity for ●●●

Anniversaries in Radioactivity

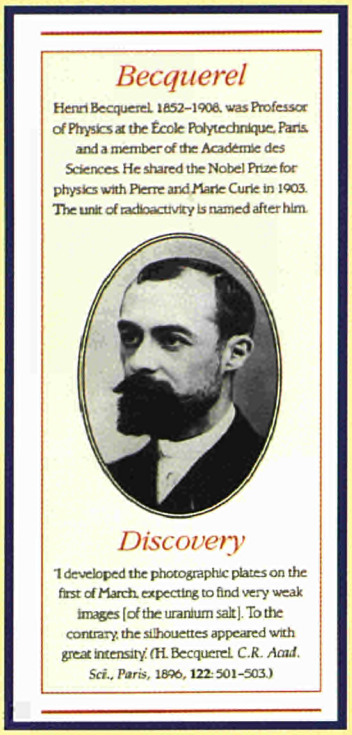
BECQUEREL'S LEGACY: A CENTURY OF RADIOACTIVITY
29 February - 1 March, London

The UK's National Radiological Protection Board (NRPB) and the British Association for the Advancement of Science are organising a two-day conference to mark the centenary of the discovery of radioactivity.

The conference will have two distinct themes: one celebratory, the other cautionary. A balanced set of papers will be presented by speakers in the fields of physics, biology, industry, engineering, medicine, epidemiology, administration and legislation. The provisional programme features:

- day 1 - discovery of radioactivity, its physical properties and natural occurrence, artificial products and applications, major sources of radioactive substances and wastes;
- day 2 - historical overview of radiation protection, analyses of adverse effects and accidents, occupational and environmental consequences, administrative and legal requirements.

Contact: Becquerel Conference Secretariat, UK.
Tel: +44 1235 822 633; **Fax:** +44 1235 822 630



Henri Becquerel, 1852-1908, Nobel Laureate (with Pierre and Marie Curie) in 1903.

MANAGEMENT AND DISPOSAL OF RADIOACTIVE WASTE
25-29 March, Luxembourg

The conference will present the main results, achievements and conclusions that can be drawn from the fourth five-year EU programme in this area.

Contact: Mr T. McMenamin, DGXII/F-5; **Fax:** +32 2 296 68 83

THE RADIOLOGICAL CONSEQUENCES OF THE CHERNOBYL ACCIDENT
18-22 March, Minsk (Belarus)

This is the first International Conference focusing on the research programme run jointly by the European Commission and the Ministries of the Russian Federation, the Ukraine and Belarus on Chernobyl Affairs.

Since its launch in 1992 the research programme has expanded to involve 16 projects and around 200 laboratories and institutes. The conference aims to present the main achievements of this programme and to promote an objective evaluation of them by the international scientific community.

The conference topics reflect the research programme's content:

- environmental transfer and decontamination;
- risk assessment and management;
- health related issues, including dosimetry.

Software developed within the programme, such as Geographic Information Systems and Decision Support Systems, will also be demonstrated.

Contact: Mr. J. Scheins, EC
Tel: +32 2 295 14 09; **Fax:** +32 2 295 37 36

ONE DECADE AFTER CHERNOBYL
8-12 April, Vienna

Sponsored by the European Commission, the International Atomic Energy Agency and the World Health Organisation, in co-operation with a number of UN agencies and the OECD, this conference aims to consolidate an international consensus on the consequences of the accident.

Objectives include agreeing on proven scientific facts and clarifying interpretations and prognoses to dispel confusion. It will also aim to quantify the actual consequences, review the social, economic and political aftermath and consider the subsequent improvements to reactor safety.

Contact: IAEA, Vienna; **Tel:** +431 2060 ext. 21312; **Fax:** +431 20607

●●● European and Asian scientific, political and industrial representatives to define the best possible conditions for economic and commercial partnership and for co-operation in scientific, technological and industrial spheres.
Contact: Mrs. T. Wolf, Forum Engelberg
Tel:+41 21 320 08 05; **Fax:** +41 21 320 82 88

1996 EU WIND ENERGY CONFERENCE AND EXHIBITION 20-24 May, Goeteborg (Sweden)

Sponsored by the European Commission and Goeteborg Energi AB, the Conference will provide a forum for presenting and discussing all aspects of wind energy, including commercial applications, demonstrations and R&D, with an emphasis on European activities.
Comprehensive presentations and discussions will take place on EU strategies and Community wind energy research and demonstration projects. The Conference will also discuss problems facing wind energy installations as a result of building permit and planning conditions.
Contact: WIP
Tel: +49 89 720 12 32; **Fax:** +49 89 720 12 91

N O T E

If specific contact information for obtaining a publication is not supplied, refer to the 'Quick Reference Guide' (this issue). Publications are free unless otherwise stated.

CD-AJ-96-001-EN-C

► PUBLICATIONS

■ THE TRANS-EUROPEAN TRANSPORT NETWORK

ISBN 92-826-9299-X

While the Single Market has been a reality since the beginning of 1993, it cannot really deliver its full benefits without a transport system designed to serve a continent rather than just individual nation states. An integrated trans-European transport network is therefore essential to enhancing the competitiveness of the European economy and to improving the quality of life of Europe's citizens.
This new 54-page booklet sets out the EU's policy with regard to the development of the Trans-European transport network. It discusses the issues involved in achieving the network and sets out the main objectives of the policy, as well as the methods of meeting the estimated funding requirements - 220 billion ECU up to 1999 and 400 billion ECU up to 2010.
Contact: EUR-OP Sales Agents (see Quick Reference Guide, this issue)

■ GENERIC TECHNOLOGIES FOR THE SPACE SECTOR

EUR 16114
'A prospective assessment of generic technologies for the space sector' is the result of a study carried out for the European Commission to assess future space technology needs and to define areas of synergy in which the technological requirements of space and non-space sectors overlap.
Contact: Mr P. Van Nes,
DG XII/D-4
Fax: +32 2 296 05 88

■ EUROPE - THE FUTURE OF TELEMATIC SERVICES FOR ENTERPRISES

BF 11,400
The background material and proceedings of a one-day conference on the future of telematic services in Europe, organised by the 'Club de Bruxelles' in Brussels last April and supported by DG XXIII, has been published.
Between them, the 80-page conference proceedings and the 310-page background study address, among other topics:
- the participation of SMEs in the creation of the information society and the role of SMEs in the EU;
- the Commission's role in promoting SME access to new technologies and the Community activities in encouraging SME participation in telematics applications programmes;
- expectations and fears of SMEs with regard to the information society;
- the dynamics of the White Paper: liberalisation, the integrated programme, SME expectations.

Contact: Club de Bruxelles
Tel: +32 2 771 98 90
Fax: +32 2 770 66 71

SUBSCRIPTION FORM

INNOVATION & TECHNOLOGY TRANSFER IS FREE

- Keep up to date on all EC actions relevant to innovation and technology transfer: General Policy News, News from the Innovation Programme, Results and Activities of the Specific Programmes, Case Studies, Upcoming Conferences, New Publications.
- To subscribe to *Innovation & Technology Transfer,* **fill in and fax this form to:**

RTD HELP DESK: FAX: +352 4301 32 084

NAME: ..... ADDRESS: .....
....
ORGANISATION: ....
....

- For bulk quantities, state the number of copies you want to receive: .....
- ITT is produced in three languages. Please indicate your preference: ❑ English ❑ French ❑ German