



G r o w t h i n a c t i o n

#3

September 2001

The Competitive and Sustainable Growth Programme magazine

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COMPETITIVE AND SUSTAINABLE GROWTH



The Growth website – new look, new structure

The newly revamped Growth website is not only more pleasing to the eye but easier to navigate. The new homepage features the latest in Growth-related industrial research news and a new menu bar allowing direct access to Growth Programme information, research themes, projects, ERA perspectives and more news and details.

Growth in Action is the magazine of the Competitive and Sustainable Growth Programme, one of the thematic programmes of the EU Fifth Framework Programme for Research and Technological Development.

The articles and information featured in this magazine are based on material already published on the Growth Programme's internet website, which can be found at <http://europa.eu.int/comm/research/growth/index.html>. Readers are invited to consult the website for more extensive coverage of the issues addressed in this magazine and to discover many more themes and articles added and updated on a regular basis.

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Editorial

Hardly a day goes by without some breaking news telling us how profoundly we are all affected by science and technology: sometimes for the best and, unfortunately, occasionally for the worst. Obviously, technologies in areas like food safety, health and the environment have a direct impact on us. From the BSE scare to oil spills off the Atlantic coast to the decoding of the human genome, we are all implicated, like it or not, in the great race for knowledge and the ability to use it. One of the fundamental problems for science and humanity now in the 21st century is simply how to keep it all going. Technology has become crucial to the very sustainability of our economic and social progress. We are no longer just highly complex biological machines living in a biological world. We also live in a technological world, with cars and aeroplanes and computers and telephones, dependent on all of this for our happiness and sustenance.

In taking up his position as European Commissioner for Research in September 1999, Philippe Busquin created a whole new momentum in Community research. A thorough assessment of the rationale for Community action culminated, at the beginning of last year, with the unveiling of the European Research Area (ERA) initiative, and nothing, seemingly, has been the same since. Rarely has a single concept spoken so eloquently of Europe's scientific potential. The ERA will, if successfully implemented, place Europe at the forefront of the global knowledge market and will make European society the most technologically advanced in the history of the world.

By all accounts, the next multi-annual Framework Programme for 2002-2006 will be one of the most important instruments for implementing the ERA, helping to organise and financially support co-operation between universities, research centres and companies. As proposed, it represents a deliberate break with the past with regard to ambition, scope, simplicity, and the instruments to be used in its implementation.

The present issue of *Growth in Action* begins with a brief overview of the new Framework Programme, focusing on areas of particular interest to Growth participants. The remaining articles represent a sample of work being carried out under the current Fifth Framework Programme, but with a special emphasis on technologies to lead us into the next one, into the ERA, into the future of Europe. It is looking better all the time.



A new Framework Programme

In just over a year, the European Research Area (ERA) has become the reference framework for research policy in Europe. Proposed by Commissioner Busquin in January 2000, the ERA is now seen as more urgently necessary than ever. While the Member States have a clear responsibility in the implementation of the project, the EU has a specific role to play through its Framework Programme (FP).

Representing a total budget of € 17 500 million*, up from € 14 960 million under the current Fifth FP, the raison d'être of the new FP is to help make a reality of the ERA. It will be based on the following overriding principles:

- ▶ **Focusing on priority** areas in which EU action can add the greatest possible value;
- ▶ **Defining activities** so as to exert a structuring effect on European research;
- ▶ **Simplifying** the implementation arrangements.

To this end, three main avenues of approach have been laid out:

- ▶ **Integrating** European research;
- ▶ **Structuring the ERA;**
- ▶ **Strengthening** the foundations of the ERA.

Activities under the first heading are intended to integrate research efforts and activities and will represent the bulk of the efforts deployed under the FP. Activities under the last two headings are intended to structure various dimensions of the ERA and will therefore be implemented across the whole field of science and technology.

Three instruments

Three main instruments will be used, each corresponding to a type of need in terms of the organisation of research in Europe. The three instruments are:

- ▶ **Integrated projects:** mobilising resources around precisely defined objectives in terms of products, processes and technical knowledge. Large SME involvement is to be encouraged. Projects should be flexible enough to allow the addition of further partners and/or tasks as appropriate.
- ▶ **Networks of excellence:** better integration of research capacities present in various European regions through 'common programmes of activities'. Networks of researchers will be oriented towards long-term objectives rather than precise pre-defined results.

Three blocks of activities:

1. Integrating European research (total budget €12 055 million)

Under the objective of 'Integrating European research', priority thematic areas have been defined on the basis of 'European added value'. The thematic areas are:

- 1) **Genomics and biotech for health** (€2 000 million);
- 2) **Information society technologies** (€3 600 million);
- 3) **Nanotechnologies, intelligent materials and new production processes** (€1 300 million);
- 4) **Aeronautics and space** (€1 000 million);
- 5) **Food safety and health risks** (€600 million);
- 6) **Sustainable development and global change** (€1 700 million);
- 7) **Citizens and governance in the European knowledge-based society** (€225 million).

In addition, activities will be undertaken under an eighth heading:

- 8) **Anticipating the EU's scientific and technological needs** (€1 630 million).

2. Structuring the ERA (€3 050 million)

The second major block of activities under the new FP comprise four categories of activities:

- ▶ Research and innovation (€300 million);
- ▶ Human resources and mobility (€1 800 million);
- ▶ Research infrastructures (€900 million);
- ▶ Science and society (€50 million).

3. Strengthening the foundations of the ERA (€450 million)

The new FP will work toward strengthening the foundations of the ERA in two ways:

- ▶ Support for the co-ordination of activities (€ 400 million);
- ▶ Support for the coherent development of policies (€ 50 million).

Programme for the European Research Area Research Area

► EU participation in joint research programmes of Member States:

making the most of Member States' research programmes in areas where their common interests coincide with the overall priorities of the EU. Efficiency will be improved through harmonised work programmes, co-ordinated budgets and the launching of joint calls for proposals.

The new FP responds to the research community's repeated calls for simplified management procedures. While still monitored by the Commission, participants will work under fewer constraints, allowing for more flexibility and improved efficiency and for reductions in administrative costs.

Implementation: the Specific Programmes

In May 2001, the Commission presented its proposals for five Specific Programmes for implementing the activities specified above as well as activities in the nuclear field:

1. Integrating and strengthening the European Research Area:

Concerned with the two blocks of activities referred to as 'Integrating European research' and 'Strengthening the foundations of the European Research Area'.

2. Structuring the European Research Area: This programme would implement the block of activities referred to as 'Structuring the European Research Area'

3. Joint Research Centre activities (non nuclear): The particular nature of the JRC's activities is considered sufficient to justify a separate Specific Programme.

4. European Atomic Energy Community (EURATOM) activities.

5. Joint Research Centre activities (nuclear)

The new Framework Programme and Growth

Industrial manufacturing research is essential in responding to the pressures of increasing globalisation, growing competition, sustainable development and demands for an improved quality of life. In its FP proposal, the Commission has reaffirmed its support for most of the key research priorities currently funded under the Competitive and Sustainable Growth Programme:

Nanotechnologies, intelligent materials and production

processes – Technologies in these area offer new approaches to sustainable development with huge economic potential , garnering € 1 300 million in proposed funding, around 30% more than under the current Growth key action 1 (production, processes and organization) and generic activity 1 (materials).

Aeronautics and space – Europe's aims, as reflected in the "Vision for 2020" report of the Group of Personalities, are to consolidate the position of its aerospace industry in the face of increasing global competition and to give European citizens a first-class air transport system which is safe, efficient and environmentally friendly. The new FP would provide € 1 000 million for aeronautics and space research, up from € 700 million under the current Growth key action 4 (new perspectives in aeronautics).

Food Safety and health risks and Sustainable development and global change – Work in these areas will be linked to the issues of 'measurements and testing' as well as those of 'land transport and marine technologies', important areas of research currently funded under the Growth generic activity 2 (measurements and testing) and key action 3 (land transport and marine technologies).

Thus, the legacy of the Growth Programme and the spirit of highly co-ordinated and targeted co-operation that it embodies will most assuredly live on.

* As proposed by the EC proposal, (COM (2001) 94 dd 21.2.2001)

for further details
see the Commissions proposals

New FP:
COM (2001)94 21.2.2001
Specific programmes:
COM (2001)279 30.5.2001-08-02

Reactions to the Framework Programme proposal are still being invited. Comments and suggestions may be sent to: research-nfp@cec.eu.int



Towards a sustainable future for



European Council
Gothenburg - 16 June 2001



Sustainability is a fundamental principle underlying the approach to collaborative research in Europe. EU commitment to sustainability was re-emphasised at the European Council meeting in Gothenburg in June 2001. And sustainability is a strong underlying theme in the Fifth Framework Programme (FP5), with projects tackling this area in many of the individual programmes. Growth makes a major contribution to this effort, with projects designed to foster the life-cycle approach and the development of environment-friendly products and processes across a broad spread of industries. Research Commissioner Philippe Busquin recently highlighted notable examples of successes achieved to date and new initiatives under way.

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The pulp and paper industry sets an example in sustainability research. Commission-funded projects in this sector facilitate use of recycled fibre, minimise water consumption and save energy. “The industry has managed to achieve particularly low pollution levels, while remaining very competitive,” said Commissioner Busquin, talking at a recent presentation to the media in Brussels on sustainability research for pulp and paper production. “Today, it is minimising the production of waste, eliminating reliance on dangerous substances and consuming fewer natural resources – while still reducing overall costs, modernising production and improving product quality. And the sector is integrating sustainability along the whole chain from forest-based raw materials to cost-effective recycling of end-products.”

Pulp and paper is an important economic sector in Europe, generating an annual turnover in excess of €400 billion and providing direct or indirect employment for around 4 million people. End products are based on wood fibres, which are both renewable and recyclable for reuse or energy generation.

Europe has long been a technological leader in this field, with a strong commitment to sustainable production. The industry provides a good example of how research funding can be used to foster European policies, and how new knowledge can be incorporated into working practices. It has made effective use of several tools available under FP5, including research projects, thematic networks, industry host fellowships and CRAFT (SME-oriented co-operative research) projects. Continuing competitive and legislative pressures make ongoing EU-level research vital.

sustainable Europe for Europe

Innovative solutions reduce environmental impact

Since 1985, well over 100 pulp- and paper-related projects, many of them particularly concerned with environmental care and sustainability, have been co-financed by the Commission, involving funding of some €150 million. Innovative research – such as process control electronics, process modelling and automation, biotechnological treatment of effluents, membrane separation and chlorine-free bleaching – has contributed to substantial reductions in environmental impact.

Use of advanced combined heat and power (CHP) plants to generate one-third of the industry's total electricity requirements has resulted in a 35% energy saving. Extensive adaptation of plants to switch from fuel oil to natural gas – as well as using biofuels such as non-recyclable paper to meet 50% of thermal energy requirements – has led to CO₂ emission reductions of 17% over the past decade. Fuel changes combined with improved process control have cut SO₂ output by 55% and NO_x by over 85% in the same period.

The generally high dependence on fresh water – about 35m³/tonne of finished product in 1999 – remains a major concern, although polluting effects such as biological oxygen demand in effluents and the discharge of organic chlorine compounds have been greatly reduced. Several Growth projects, including PAPER KIDNEY¹ and a CRAFT initiative² involving a group of SME paper mills, support moves to closed-loop processes with high product quality maintained wherever possible. This will bring water consumption and effluent output down to even lower levels – but improvements in this and other areas will become increasingly difficult to achieve.

Typical is the fact that closed water circuits create favourable conditions for micro-organisms and lead to increased build-up of slime deposits that cause severe operational problems, especially when using recycled fibre



as raw material. New eco-efficient methods for slime control are being developed (for example, in the SLIMEZYMES³ project), to replace conventional biocides that are potentially toxic to the environment.

With higher levels of recycling, manufacturers need to deal with larger volumes of residues. Some can be incinerated to provide energy input; others are finding application as additives in building materials. More research is necessary to find further economical uses for such by-products, or to minimise the effects of any unavoidable disposal.

Tougher emission reduction targets to combat global warming present yet another challenge. In this respect, the roles of forests as sources of raw materials and biofuels, versus their capacity to act as sinks for atmospheric CO₂, require careful evaluation.

Initiatives in electronics

Introduction of integrated product policies linking the complete cycle from design and production, through service until the end of life, is a major priority in the drive for sustainability.

(1) PAPER KIDNEY: Advanced water treatment technologies for kidney operating of zero effluent water systems for paper and board production (BRPR988002)
(2) CRAFT project: A competitive concept for the paper industry towards zero liquid effluent (BRST 985399)
(3) SLIMEZYMES: Eco efficient novel enzymatic concepts for slime control in pulp and paper processing (G1RD-2000-00387)

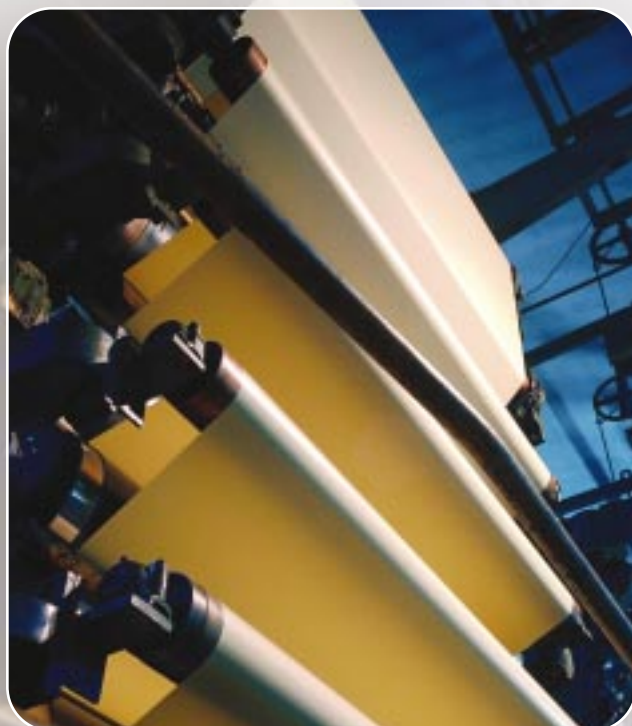


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The Growth programme contributes to this 'life-cycle' approach in the electrical and electronic industries. The EU currently produces over 8 million tonnes of electronics waste a year. Consumer electronics and electrical appliance manufacturers are constantly redesigning and placing new models on the market to stay ahead of rivals. Technological advances in computer technology, for instance, render designs redundant after only a few months. This poses problems for traditional forms of recycling, such as the take-back of components and reuse of materials.

In Stockholm, Commissioner Busquin singled out the recently initiated grEEEn⁴ project, which aims to help manufacturers gauge when and where they can adapt designs and processes to improve performance and reduce the economic burden of compliance with proposed laws obliging them to look at the lifetime environmental costs of their products.



A further significant initiative in the electrical/electronics sector is SAFERELNET⁵: a soon-to-be-launched thematic network with ambitious plans to improve the coherence of safety and reliability considerations in the design of products, production facilities, industrial systems and structures in Europe.

Targeting more industries

More instances of the ways in which Growth-funded research is helping to cut pollution, while at the same time improving manufacturing economy or process quality, can be found in the metals and plastics industries.

LEPOCUT⁶ demonstrated the feasibility of reducing, or even excluding, the need for lubricants in metal cutting – eliminating a health hazard and saving up to 20% in operating costs. And in SUPERPOL⁷, replacement of solvents by supercritical CO₂ offers a route to more environment-friendly production of high-purity polymers.

Other projects target moves towards sustainable processes for chemicals manufacture. One, dealing with an integrated design, synthesis and optimisation approach for efficient chemical process configurations combining reaction and distillation⁸, has shown how placing a reactor inside a distillation column permits reaction products to be formed and simultaneously removed from the reaction zone. Raw materials and by-products are recycled inside the column, so chemical equilibrium restrictions of traditional processes can be avoided and much higher conversion and often selectivity and yield can be achieved. INTINT⁹ will continue this work, developing new internals for the separation columns and devising a novel methodology for the design of reactive separations.

Started in April 2001, CHEM¹⁰ will take a broader approach, building flexible and integrated software to improve operations in refining, chemical and petrochemical processes. The aim is to use information available on industrial plants to determine how optimal states can be reached, to avoid unscheduled shut-downs and abnormal situations. As well as adding to environment protection, the project is likely to have large impacts on economy and safety.

presidency conclusions, european council, gothenburg, 15-16 june 2001

“The European Council agrees a strategy for sustainable development which completes the Union's political commitment to economic and social renewal, adds a third, environmental dimension to the Lisbon strategy and establishes a new approach to policy making. The arrangements for implementing this strategy will be developed by the Council.

“Clear and stable objectives for sustainable development will present significant economic opportunities. This has the potential to unleash a new wave of technological innovation and investment, generating growth and employment. The European Council invites industry to take part in the development and wider use of new environmentally friendly technologies in sectors such as energy and transport. In this context the European Council stresses the importance of decoupling economic growth from resource use.”



ERA is key

The European Research Area (ERA) provides an ideal context within which to integrate these co-operative projects and use the individual strengths of Member States to resolve problems faced by the EU as a whole.

A principal tool to establish the ERA will be the new Framework Programme for Research and Innovation (2000-2006) (see page 4). The new FP will incorporate a socio-economic dimension into research projects, and develop methods to measure sustainability. It will also embrace studies of technologies and systems for optimal resource utilisation as identified by the June 2001 European Council meeting in Sweden and ensure that ongoing dialogue with Europe's citizens and enterprises will maximise understanding of, and support for, the vision of sustainable development.

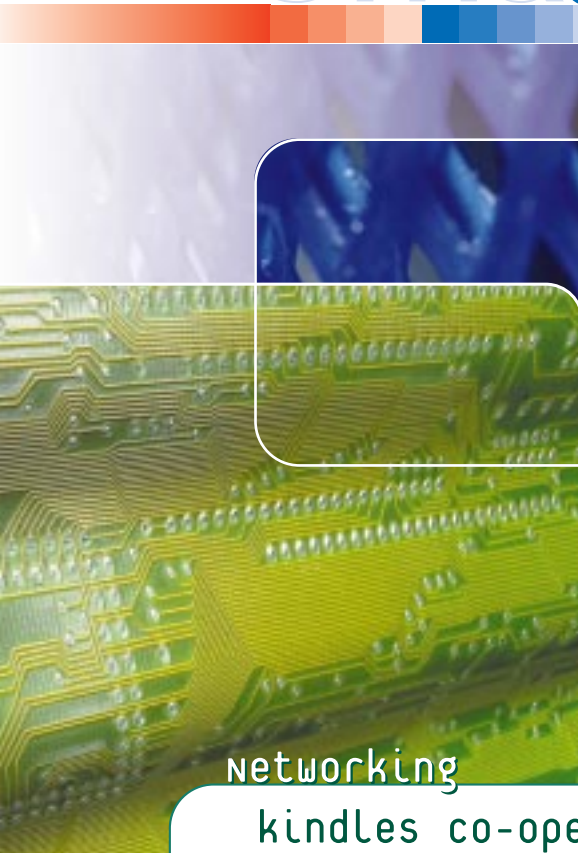
As a means of integrating and strengthening research efforts in Europe, the new Framework Programme will con-

tribute to assembling a critical mass of financial and human resources and encourage multi-disciplinarity. Two new instruments have been designed to achieve these objectives: integrated projects and centres of excellence.

- (4) *grEEEn: Cost management system for greening electrical and electronic equipment (G1RD-2000-00355)*
- (5) *SAFERELNET: Safety and reliability of industrial products, systems and structures (GTC2-2000-33043)*
- (6) *LEPOCUT: Developing less pollutant cutting technologies (BRPR-CT95-0107)*
- (7) *SUPERPOL: Polymerisation and polymer modification in supercritical fluids - a novel way for cleaner manufacturing of plastics (BRPR970503)*
- (8) *An integrated design synthesis and optimisation approach for efficient chemical process configurations combining reaction and distillation (BRPR950087)*
- (9) *INTINT: Intelligent column internals for reactive separations (G1RD-1999-00048)*
- (10) *CHEM: Advanced decision support system for chemical/petrochemical manufacturing processes (G1RD-2001-00466)*



'Smart' materials will



New composite polymers reinforced with high strength are at a premium, saving lives and reducing suffering by preventing ulcers. Tiny carbon nanotubes used in ultra-miniaturised electronics and other material advances will play a key role.

Dazzling technological material advances are already forming the basis of better products and services that contribute to change and improvement in the quality of human life, while also generating wealth and employment. Within a decade, materials will become even more 'intelligent' – increasingly integrating new knowledge and added value in the form of extra functions such as self-diagnosis and self-repair. They will become more eco-friendly to produce and use, permitting easy recycling and consuming less natural resources.

At the same time, manufacturing patterns will move towards more knowledge-based approaches: from quantity to quality; from mass-produced single-use goods to batch-produced, customer-tailored, multi-use products and 'product-services'. The potential applications are virtually limitless, and the implications for the economy and society are huge!

Support for materials research

Since 1983, materials science has figured strongly in the European Commission's series of multi-annual Framework Programmes for Research and Technological Development (RTD). For the Growth programme alone, the currently running FP5 has allocated around €410 million to the generic activity, 'materials and their technologies for production and transformation'.

Although the RTD Framework Programmes formerly had a clear 'technology push' character, they have evolved towards a more 'market pull' orientation, involving stronger collaboration between industry and universities. Today's projects exhibit a very high scientific and technical quality, together with strong potential for strategic impact on societal needs and emerging markets.

networking kindles co-operation

"Collaborative research can have significant impacts beyond its own immediate sphere of activity," says Laurence Caramaro of the Institut Français du Textile et de l'Habillement (IFTH), co-ordinator of the SMARTEX' project. "The good relations developed between industrial partners in this initiative have encouraged them to enter into broader areas of collaboration."

"We also took the opportunity of a technical meeting to organise a networking conference, to which we invited members of the consortia of other projects in which IFTH was involved," she adds. "This led to fruitful exchanges, new collaborations and ideas for future innovative projects."

"Moreover, as a result of our work, we have been requested to contribute to the defining of new UV protection standards being developed under the EU's Standards, Measurement and Testing Programme. There is an evident will to work together in Europe, which we should encourage by all possible means."

change our lives

change our lives

...ced with fibres are being used in applications where lightness and
– in aerospace and racing cars, for example. Biomaterials are saving
enabling skin to be regenerated for the treatment of burns and
... that can behave like semiconductors or metals will eventually appear
... , advanced drug-delivery systems and energy-storing fuel cells. Such
... y role in the next European research Framework Programme.

One example is the Brite-Euram SMARTEX¹ project. This has succeeded in developing tailored polymer fibres incorporating special marker molecules that undergo changes in colour or other properties under the influence of heat, light or strain.

An initial use of these will be in fabrics for sports and swimming garments that automatically 'switch on' screens to safeguard the wearers against harmful ultraviolet radiation from the sun. Another will be to add a visually undetectable 'signature' to the fibres as protection against counterfeiting. With further work, it should also be possible to build a safety check facility into load-bearing ropes and slings. These and other eventual applications will give the European textile industry valuable opportunities to grow and prosper by exploiting the technological edge resulting from collaborative research.

Nanotechnology revolution

Among the most promising fields for new research is nanotechnology, which involves multidisciplinary studies into the manipulation and control of materials at the atomic level. Although many of the exciting discoveries now being made will take many years to be translated into practical products, it is expected that nanotechnology will ultimately be the key to a major industrial and life-style revolution.

Already, the Growth NANOPTT² project now under way is capitalising on an established European lead in two key areas: heavy ion technology and spin electronics/magnetism. The team is employing ion beam emissions to produce precisely dimensioned nano-scale perforations in plastic films, which then serve as templates for the deposition of metals and conductive polymers in the form of

nanowires. These will be optimised to produce a variety of devices, from microwave filters and non-volatile data storage memories, to chemical detectors and lab-on-chip sensors.

New opportunities

The advent of the European Research Area brings more opportunities to promote innovation and sustainable growth in the context of a knowledge-based economy. In the next European Commission Framework Programme for Research and Technological Development, starting in 2002, one of the priority thematic areas, as proposed by the European Commission³, will be 'Nanotechnologies, intelligent materials and new production processes' – making this an important strategic focus for future European RTD.

Long-term interdisciplinary research will cover the entire materials life cycle, and embrace the full spectrum from the acquisition of fundamental knowledge to the development of: new materials, novel manipulation tools and new cutting-edge applications. This will encourage the formation of entrepreneurial high-tech SMEs (small- and medium-sized enterprises) and create new, appealing European careers that cross traditional scientific frontiers to deliver the intelligent materials of tomorrow's world.

(1) SMARTEX: *New functional and smart fibres for technical textile applications (BRPR980669)*

(2) NANOPTT: *Conductive nanowires for applications in microwave, magnetic and chemical sensing devices based on polymer track etched templates (G5RD-1999-00135)*

(3) *European Commission Communication COM(2001)279 final, 30 May 2001*



Metrology: measurements testing tools for

Measurements are such an integral part of daily life that they are often taken for granted. Their importance only becomes apparent when trade disputes arise, when product systems fail or when there are health or environmental scares.

Metrology is defined as the science of measurement, including the development of standards and systems for absolute and relative measurements. Within the European single market, a common measurement and testing infrastructure is necessary to ensure comparability and quality control, to safeguard public health and the environment and to protect consumers against fraud.

Building on experience

In 1973, well before the beginning of the framework programmes for RTD, the Community Bureau of Reference was established at the Commission's Joint Research Centre (JRC), aimed at meeting the increasing need for European harmonisation in measurements and testing (M&T). From 1994 to 1998, these activities were part of the Standards, Measurements and Testing Programme, with a total budget of more than €173 million, allowing for considerably

increased and diversified activity in this key sector. More than 360 projects were financed through shared-cost actions, including RTD and Co-operative Research (CRAFT), and co-ordination activities. Projects spanned areas ranging from product quality measurements to written standards and technical support for trade, health and safety, protection of cultural heritage, environmental monitoring and the justice system. Currently, such research has been repositioned under the Fifth Framework Programme (1998-2002), where it is included within the Competitive and Sustainable Growth Programme.

Research priorities under the Growth Programme

M&T is seen as a generic field of research, needed within all sectors of science and technology. The Growth Work Programme sets out three overriding socio-economic objectives for M&T research:

- ▶ **Standardisation** – defining performance, reliability and safety requirements;
- ▶ **Fraud and crime detection and prevention** – protecting economic interests and ensuring the health and safety of citizens;
- ▶ **Quality improvement** – methods, international traceability and equivalence of quality measurements.

RTD activities required to meet these objectives include the development of:

- ▶ **Instrumentation** – instruments and measuring systems, including software;
- ▶ **Methodologies** – methods, strategies and databases;
- ▶ **Certified reference materials (CRMs)** – reference samples for identification, as calibrants, and as tools for quality control.

The total M&T budget under FP5 is €136 million, with 74 running projects involving 471 participants, as of March 2001.

swimming in clear water

A recent report indicates that water quality at coastal and inland bathing resorts is improving, but the lack of standardised microbial measurement methods has left the results in dispute. Once again the importance of a common and recognised measurement and testing system has been made glaringly apparent. According to Bert Van Maele of the Environment Directorate-General, the next Commission bathing water directive is expected to make specific reference to a CEN or ISO standard.

For more, see the European Research News Centre website:

<http://europa.eu.int/comm/research/news-centre/en/med/01-03-med04.html>

Measurements and testing in the future Europe

notable research projects in metrology:

- ISOTRACE** – Detection of illegal drugs in sport;
- NITE-CRIME** – A detector for ultra-low radioactivity measurements (see p.16);
- BUBBLES** – Ultrasonic technique for detecting air bubbles in ceramics;
- SVEN** – Vehicle noise;
- BEQUALM** – Quality assurance in marine monitoring;
- STADNAP** – Standardisation of DNA profiling techniques;
- LASERART** – Laser techniques for conservation of artworks;
- SGLC/MS** – Detecting steroid glucuronides in sport;
- WASWAT** – Wastewater certified reference materials;
- BROC** – Biological reference materials for organic contaminants.

Monitoring and controlling lead

Because of its high toxicity, lead is one of the most closely monitored chemicals in Europe, but the problem of how to measure it remains unresolved. A number of different sampling procedures have now been evaluated under a recent Commission-supported study. "The results, while highlighting the complexity of the problem," says Ierotheos Papadopoulos of the Commission's Environment Directorate-General, "can now serve as a basis for an agreement on a common sampling method."

For more, see the European Research News Centre website:

<http://europa.eu.int/comm/research/news-centre/en/med/01-03-med03.html>

The bottom line – principles and resources

The reporting of results remains a crucial aspect of policy-related metrology research. A strong European M&T infrastructure should include networks capable of giving scientific advice whenever asked, forming the basis for relevant early-warning systems. As for appropriate funding, a number of monitoring and assessment panels have noted the profound importance of M&T, recommending budget increases for this activity.

The definition of future research tasks must include consultations with a wide range of stakeholders. The High-Level Expert Group of the M&T generic activity under Growth has recommended concentrating on the following three priority areas:

- ▶ **Trade** – A common M&T structure is a prerequisite for the single market and for world trade as a whole;
- ▶ **Competitiveness** – M&T is needed for industrial product and process development, quality assurance and compliance.
- ▶ **Safety** – Measurement and harmonisation play important roles in health care, safety, environmental science and consumer protection, and contribute to the detection of a range of criminal activities.

M&T and the European Research Area (ERA)

The primary goals of EU-supported M&T activity have been to contribute to consensus building and harmonisation while ensuring that the results have an impact on Community policies. These are inherently European aims and, in this respect, M&T research is a highly ERA-oriented activity, contributing to the vision of a united, competitive, sustainable and safer Europe.

Work is currently under way towards the development of a unified chemical metrology infrastructure in Europe, covering industrial, environmental, food and health sectors, and an effort is being made to prepare laboratories in the candidate Member States for their tasks in adopting and implementing European directives. Finally, the creation of a 'Virtual Institute' for metrology has been suggested, placing measurements and testing at the forefront of the new wave of ERA-building activities.



Metrology in the spotlight at the IN



Over 200 participants at the metrology conference in Paris on 14 and 15 June 2001 were treated to an impressive display of posters and two days of animated and sometimes heated discussion, ranging from environmental protection to food safety and public health.

The event, organised by France's Institut National de l'Environnement Industriel et des Risques (INERIS) and sponsored in part by the Growth Programme, was entitled 'Environment, Health, Safety - A challenge for Measurements' and was held at the UNESCO building. According to INERIS President, Maryse Arditi, the choice of the UNESCO facility was meant to instil the sense of unity and co-operation which embody that organisation.

Establishing trust

One of the 'buzz terms' heard repeatedly during the course of the conference was 'the precautionary principle', according to which we assume the worst until we are sure. "When we don't know for sure we shouldn't say there is no impact," said Member of the European Parliament Yves Piétrasanta, "In the absence of evidence we must assume the worst. We are not just talking here about measurements and the ERA. We are talking about people. We need to establish trust and to allow people to learn to appreciate science and scientific advancement."

Session 1: focus on the environment

"The available resources for work on environmental research are very limited in comparison with other technological areas," said Arditi. "Efficient co-operation is therefore very important and this has to be recognised by all concerned."

Indeed, with its recent Communication on the European Research Area (ERA), the Commission has challenged European research to rationalise and optimise through the co-ordination of its efforts.

Following Arditi, Alain Costes, Director of Technology at the French Research Ministry, spoke about metrology and the environment from a larger perspective. "Throughout history," he said, "men and women have faced the prospect of natural disasters with fear and superstition. Today, many of our disasters are man-made. Technology has allowed man to become a major environmental player, often with terrible consequences." Costes then took the audience by surprise by announcing the setting up of a new multi-disciplinary board on climate change by the French Research Ministry.

Session 2: towards reliable environmental monitoring

The second session, chaired by Jean-Marie Martin, Director of the Joint Research Centre's (JRC's) Environmental Institute, featured the question of environmental monitoring. Topics included:

- Biomonitoring - using biological responses to assess environmental changes;
- Clean air - Europe-wide monitoring is a priority for implementing the Clean Air for Europe (CAFE) Programme;
- Marine environmental monitoring - chemical and biological measurements in European waters;
- Reference materials - reference materials (RMs) and certified reference materials (CRMs) are essential for accurate, precise and reliable measurement results;
- Complementary chemical and biological analysis - the effects of gaseous, liquid and solid industrial emissions.

ERIS conference

Session 3: putting scientific results to work

On day 2, Pierre Hecq of the Commission's Environment Directorate-General chaired a series of presentations on the practical application of metrology results.

Erwin Rosenberg of the Technical University of Vienna discussed reducing costs. "Modern metrology has at its disposal a range of powerful but expensive tools," he said, "but before we start our analyses, we'd better be sure we're measuring the right thing."

Here, Rosenberg hit on another key topic – the concept of speciation. "It is widely accepted among chemists today," he said, "that it is not the total concentration of a particular element that determines its toxicity, but rather the chemical form in which it occurs. Therefore, we should focus our efforts and resources on measuring those forms which are of concern to society."

The next speaker was Rainer Stephany from the National Institute of Public Health and the Environment in the Netherlands, representing the inspection and surveillance community.

Confronting the misuse of scientific data

"The important thing here is that we don't misrepresent the hazards," said Stephany. "Politicians sometimes prefer to use scientific information as a political and economic weapon, to keep foreign products out of their markets while their own products are, in reality, no better" – a controversial remark which caused more than a little stir among the audience. Stephany persisted, "Oh yes, the public has to know this. It is also our responsibility to serve the people and not just the politicians."

The next speaker, INERIS' Eric Vindimian evoked one of the fundamental principles of science – doubt. "We as scientists are trained to doubt. When our colleagues discover some new principle, we immediately say: 'Are you sure?' But journalists and the media are seen more as purveyors of certainty. What we have to do is find a way to convey our way of thinking to the public at large."



Session 4: summing up

The conference ended with an extended round-table session, chaired by Arditi and featuring an array of metrology 'heavy hitters', including Manfred Grasserbauer of the JRC's Institute for Reference Materials and Measurements, Karel Aim of the Institute of Chemical Process Fundamentals in the Czech Republic, and Kalin Borissov of the Danube Commission. The exchange was lively and, at times, heated. "The environment is an area to which politicians must address themselves," urged Jean-Louis Weber of the French Environment Institute. "They have to understand the difficulties of scientists. The 'Bridging the Gap' conference played up the importance of uncertainty and we have to remember this. Above all, politicians have to act responsibly, and we as metrologists have to hold them to that."

The closing session was a rousing finale to a stimulating two days of discussion. While disagreements did arise, none disputed the fact that metrology has long been of particular interest to the EU. All will now be anticipating the new Framework Programme (see page 4), expected to go further than ever in promoting the interdisciplinary, multi-sectoral and co-ordinated approach endorsed by so many at the INERIS conference.



Material Witness

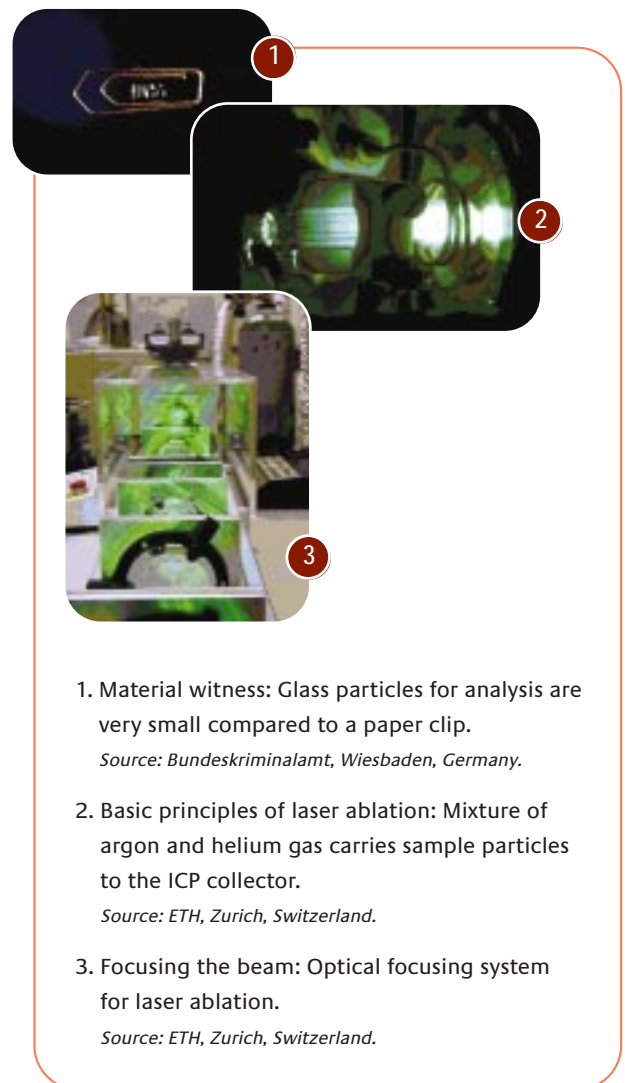
With EU support, the 11 members of the Nite-Crime network, comprising forensic science institutes and chemical and other research organisations, are developing sophisticated chemical analysis techniques using mass spectrometry. These will enable the identification – with a very high degree of certainty – of a range of non-organic materials. Precise identification of the original source of substances such as glass, bullets and paint is invaluable in criminal investigations.

Determining the exact origin of materials found at the scene of a crime can result in the vital evidence necessary to implicate a suspect. This is especially true as criminals are becoming more sophisticated and now take care not to leave any materials or traces of their presence at the scene of a crime which can link them through DNA testing. With many traditional test methods there is often room for uncertainty, which may prove unacceptable in a court of law.

To assist in the fight against fraud and crime, a thematic network has been set up under the EC's Growth Programme's 'measurements and testing' generic activity. The project is developing analysis techniques capable of identifying the source of minute fragments of inert materials. The Nite-Crime – Natural Isotopes and Trace Elements in Criminalistics and Environmental Forensics – project will help to provide evidence to link an individual to a crime scene.

Weighing up the problem

Basically, the mass spectrometer is a specialised weighing machine. It uses the difference in mass-to-charge ratio of ionised atoms or molecules to separate them from each other. These ions must first be created, then separated and measured. Developments in mass spectrometry now offer a range of techniques for determining the trace-element composition or isotopic ratios of inorganic materials. The key advance is the combination of laser ablation – to create the ions – with various separation methods such as multi-collector ICP-MS (inductively coupled plasma-mass spectrometry).



1. Material witness: Glass particles for analysis are very small compared to a paper clip.

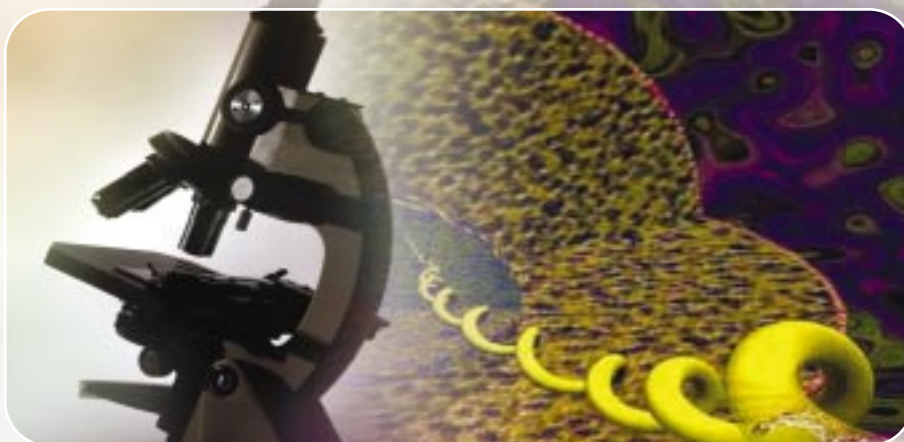
Source: Bundeskriminalamt, Wiesbaden, Germany.

2. Basic principles of laser ablation: Mixture of argon and helium gas carries sample particles to the ICP collector.

Source: ETH, Zurich, Switzerland.

3. Focusing the beam: Optical focusing system for laser ablation.

Source: ETH, Zurich, Switzerland.



“Most analytical labs are already using such ICP methods,” explains the Nite-Crime co-ordinator Jurian Hoogewerff of the UK’s Institute of Food Research, “but laser systems are expensive and the laser-ICP combination would only be available at a regional level.” Laser ablation ICP-MS analyses a wide range of elements in a sample, and can determine less than one part per billion of some elements.

The principle of laser ablation is that a laser beam impacts on a sample within a closed area, through which a stream of inert gas is passed, usually a mixture of argon and helium. Particles from the sample mix with the gas to form an aerosol and, in this way, the mixture is transported to the mass spectrometer where it is ionised and determined.

Forensic assistance

In a murder case where the police suspect that a body may have been moved from the scene of the crime to the burial place, they will need forensic assistance. An examination of the mineral debris on the body or clothes can reveal the unique signature of its chemical constituents. “Comparing the mineral breakdown of the fragments from the two sites can show conclusively,” explains John Watling of Curtin University, Perth, Australia “whether the body has been in either or both places.”

Stefan Becker from the German Forensic Science Institute of the Bundeskriminalamt, Wiesbaden, Germany, recounts one example of a non-personal crime which was elucidated by the new technique. A major German pharmaceutical company which suspected that a batch of its immune human blood plasma was not German-made but, in fact,

had been produced in China, approached the Institute. The quality of this serum was so high that no difference could be detected from the authentic German plasma. Only by analysing the trace element composition of its glass container could the true origin be ascertained as Chinese-produced plasma.

Databases of inorganic materials

One of the main aims of Nite-Crime is to develop standard, validated methods and techniques which can be used to build up databases of the composition of those inorganic materials commonly found at crime scenes – glass, bullets and gunshot residues, car paint and others. “All substances used around the house,” says Hoogewerff, “are based on raw materials from some sort of geological source – once we understand the trace element and isotope signatures of these materials they can be traced through the whole production process.”

Because the technique in question is so new, work still needs to be done on standardising the process. Decisions are required on the optimum conditions for laser ablation, which must be standardised before reference identifications of materials can be recorded. For this reason the Nite-Crime network will concentrate during its first year on setting these standards; later it will develop protocols for the materials most commonly implicated in crime scenes.

The new mass spectrometry method will be to inorganic analysis what DNA testing is to organic and human material – the key to identification with a high level of certainty, once it becomes more widely available.



The PREMTECH 2001 Conference designing

Traffic pollution is widely considered to be one of the most serious environmental problems facing the European Union today. Now, the EU-sponsored PREMTECH (PROulsion systems and EMISSIONS reduction TECHNOLOGIES) network, set up in 1997, is trying to change all of that, bringing together researchers working in the field of cleaner car engines from across the European Union.

Over 100 researchers and industry experts took part in PREMTECH's two-day annual review conference, held near Paris on 12 and 13 February 2001. Many of Europe's largest carmakers were present, including Daimler Benz and Volkswagen from Germany, Renault and PSA Peugeot Citroën from France, Italian auto giant Fiat and Sweden's Volvo. On the academic side, researchers from institutions in nearly all of the Union's 15 Member States took part along with experts from a number of national authorities such as the UK's Department of Trade and Industry and the Irish agency, Enterprise Ireland.

Hunting the emissions

"The cars being described here today are the vehicles you will be seeing on the road in four or five years' time. It really is very exciting," said Daniel Chiron, the EC scientific officer for PREMTECH. PREMTECH's aims are simple – to help create cleaner, safer cars. As Bernd Lange, Member of the European Parliament put it in his opening speech, "The mission is hunting the emissions."

In more concrete terms, PREMTECH has established a network linking Community-funded projects aimed at the development of energy efficient, near zero emission internal combustion engines running on conventional or cleaner fuels.

The network intends to ensure that the development of advanced engines and after-treatment reduction technologies is well defined and suited to industry objectives. The network also ensures efficient project integration, optimisation of different technologies, and that new needs and requirements dictated by the future evolution of fuel consumption and emissions standards are properly taken into account.

PREMTECH has identified four major areas of development:

- ▶ advanced propulsion systems for Otto cycle engines;
- ▶ advanced propulsion systems for Diesel cycle engines;
- ▶ control systems;
- ▶ after-treatment systems.

Co-ordinated diversity

Researchers taking part in PREMTECH projects work in groups known as 'clusters', each one looking at a different element of car design. For example, one of the current cluster is looking at ways of developing 'hybrid' cars, which would run on a mixture of conventional fuels and battery power. Another is working on the question of cleaner engines that would produce lower emissions of sulphur and other harmful gases. A third is looking at the possibility of building a new generation of lightweight cars that would consume less petrol than current models.

One thing that all PREMTECH projects have in common is that they bring together researchers from the academic world and the automotive industry from across the European Union. As Christos Tokamanis, head of the Inland Transport and Marine Technology unit at the Commission's Directorate-General for Research explains, PREMTECH really offers "a flavour of the European Research Area".

The European Research Area (ERA), now being championed by EU Research Commissioner, Philippe Busquin, is intended to close the current 'R&D gap' between the EU and its competitors in the United States and Japan by creating a Union-wide research community. If the recent PREMTECH meeting was anything to go by, the ERA certainly seems to have got off to a good start.

Conference: the car of the future



Widening the call

One of the more innovative elements of this year's PREMTECH meeting was the decision to invite researchers from some of the non-EU countries currently lining up to join the Union. When the current round of funding for PREMTECH projects commenced in June this year, researchers from these applicant countries were able to submit proposals along with their EU counterparts.

While all of the speakers at the meeting were clearly proud of the progress made over the past four years, none of them are resting on their laurels. Everyone agreed there is still a great deal of work to be done before the 'car of the future' becomes a reality. Chiron said the Commission would probably provide partial funding for around 20 new PREMTECH projects this year. He added that his institution would be paying particular attention to the socio-economic aspects of any proposals submitted. In other words, applicants for funding would have to consider issues such as the impact their new cars would have on pedestrians and local residents as well as looking at questions of fuel efficiency.

"The criteria of reducing emissions and increasing safety are the same," he said, "but there is still a lot more to be done, so we are expecting to see some exciting new proposals."



ACARE launched at the

Europe was out in force at this year's Paris Air Show, an event that featured new aeroplanes, new ideas and a new approach to aeronautics research in the form of the ACARE, the new Advisory Council for Aeronautics Research in Europe.



ACARE: membership and mission

The ACARE is composed of 30 members, including representation from Member States, the Commission and stakeholders. The eminent personalities include DLR President Walter Kröll, François Lureau, General Director of the Thales Aeronautics Group, Phil Ruffles, Director of Engineering and Technology at Rolls Royce, Joachim Szodrich, Director of EADS Airbus and Victor Aguado, General Director of Eurocontrol. The ACARE will meet two to three times a year and will submit a Strategic Research Agenda (SRA) as well as its positions, opinions, recommendations and reports to all the relevant players. The primary mission of the ACARE will be to establish and carry forward the SRA, which will serve as a guide in the planning of research programmes, particularly national and EU programmes. To this end, its activities will include:

- ▶ the launching, approval and updating of the SRA;
- ▶ the making of strategic and operational recommendations and the commissioning of studies for implementing the SRA;
- ▶ the evaluation of the results and benefits of the SRA for Member States, the Commission and other players;
- ▶ the recommendation of measures for optimising the use of existing research infrastructure and achieving cost-effective investments;
- ▶ the recommendation of measures for improving education policies to attract the scientists and engineers needed in the sector;
- ▶ the implementation of a communications strategy for promoting awareness of the SRA and for disseminating information on research.

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The Paris Air Show is the longest established event of its kind, first held in the Grand-Palais in central Paris in 1909. It has been, and remains, the world's premier air show. This year's 44th edition gave over 300 000 visitors an opportunity to inspect 240 aircraft and to visit displays by almost 2 000 exhibitors from 43 countries.

It was against this backdrop that selected guests were invited by Commissioner Busquin to witness the opening of the first working meeting of the new Advisory Council for Aeronautics Research in Europe (ACARE). In his welcoming statement, addressed both to the Council and visitors, Mr Busquin said, "In its report, delivered in Hamburg last January, the Group of Personalities called on all of us to make Europe a global leader in the field of aeronautics but, without question, in order to achieve this, we know that good research is an essential element. Europe has to further improve the organisation of its efforts in the face of worldwide competition, especially from the United States."

Paris Air Show

Paris Air Show

The Strategic Research Agenda

The SRA represents the plan for materialising the 2020 Vision and the goals it identifies. Those goals are:

- ▶ to make Europe the uncontested world leader in aeronautics through collaboration, strengthened and guided by a single shared vision;
- ▶ the creation of a common structure as regards research and technological development in the service of a leading-edge sector symbolising European industrial ingenuity and excellence.

The response to issues of public interest was also a key element of the 2020 Vision, including noise reduction, emission reduction, travel delays, and safer air transport.

The SRA will not be a detailed research work programme, but will consist of a statement of research priorities, including recommendations for the implementation of both public and private research programmes and the identification of the necessary steps and timing. It will also determine to what extent existing plans and programmes remain valid.

“ACARE starts its work today,” said Busquin. “This is a first real step toward a European Research Area in aeronautics. In elaborating a Strategic Research Agenda, the new council will serve a crucial guiding role in the setting of our common goals. Already, Aeronautics and Space has been designated as one of seven ‘thematic priority’ areas in the proposal for the Sixth Framework Programme, with €1 billion as a suggested budget, but ACARE’s influence will not be limited to this or any future Framework Programme.”

Before leaving Paris, Busquin elaborated for reporters: “We need to take a more global view of what we are doing, to know which of us is best suited to doing what and when. The idea is to get everyone together and to develop, in a rational and co-ordinated way, the technologies we are going to need to succeed in the future.” Asked why so much European tax money was going into aeronautics, Busquin replied, “It’s simple. First, to get you where you want to go quickly and without a lot of wasted time. Second, to get you there safely. Third, we are going to make less noise for people on the ground, and we’re going to reduce the amount of pollution we create. You see, aeroplanes are everywhere today. They are an everyday thing and here in Europe our space is limited and our density is high. You don’t have to fly a lot to benefit from improved air transport. This is for everyone.”



current aeronautics projects:

AFAS – This project is investigating the cost-benefit relationship of combined innovative technologies as well as regulatory, safety and service standards in the area of European Air Traffic Management (ATM).

MA-AFAS – Also in the area of European ATM, this project is addressing the common operational concept of a greater level of autonomy for the individual aircraft, getting more Air Traffic Control functionality out of the control tower and into the plane.

TANGO – An integrated approach to the validation of new large-scale structural technologies in the construction of major aircraft components, including new design principles, advanced materials and improved manufacturing processes.

VICTORIA – This project’s main objectives are to design, prepare and validate a new system that would integrate all on-board electronic functions for commercial airliners, including both flight and passenger management systems.



Major European project clamps down on aircraft noise

The largest ever European aircraft noise research project, known as SILENCE(R), was launched on 1 April 2001. Fifty-one partners will collaborate for four years to validate new technologies for reducing noise by up to six decibels as of 2008. The European Commission's Fifth Framework Programme is funding 50% of the project whose total budget exceeds €110 million.

No other effect of air transport operations is felt as directly as aircraft noise. Landings and take-offs at airports generate repeated high peaks of noise that occur quickly and then fade away. While the annoyance due to aircraft noise is determined by a variety of factors, a key area of improvement remains reduction of noise at the source, that is the development of quieter aircraft.

Putting technology to the test

Essentially a large-scale validation programme, SILENCE(R) will focus on technologies whose development was initiated by EU and national projects in 1998. An assessment will be made of their applicability within the European aeronautics industry, including their effects on cost, weight and performance. Finally, the achievable noise reduction will be evaluated.

A top-flight commitment

"SILENCE(R) is a clear sign of our industry's commitment to a quieter environment," says project co-ordinator Eugene Kors. "Increasing air traffic means more jobs and a stronger economy for Europe, but there is an environmental downside. This project will help us to minimise that downside. All of the major European air engine and airframe manufacturers are involved in the project as well as the major research institutes and a number of universities. We have also been successful in including SMEs from around Europe. We now have companies working together which would normally be fierce commercial competitors."

SILENCE(R) is linked to X-Noise, a European Thematic Network on aircraft noise and builds upon the results of other projects carried out under the Fourth and Fifth Framework Programmes.

Living up to new standards for noise reduction

The air transport industry has already achieved major reductions in the noise made by typical jets. An aircraft entering the fleet today is typically 20dB quieter than a comparable aircraft of 30 years ago, corresponding to a reduction in noise annoyance of around 75%.

On 17 January 2001 in Montreal, the Committee on Aviation Environmental Protection (CAEP) of the International Civil Aviation Organization (ICAO) developed a comprehensive series of recommendations to reduce the environmental impact of aircraft noise.

Seen in this context, the SILENCE(R) project would seem to be an appropriately bold response. The project's kick-off meeting took place in Copenhagen last April and was capped by a public session involving presentations by the European Commission and major industrial partners.

other related projects:

- DUCAT** – Basic research on duct acoustics and radiation
- JEAN** – Jet exhaust aerodynamics and noise
- RAIN** – Reduction of airframe and installation noise
- RANNTAC** – Reduction of aircraft noise by nacelle treatment and active control
- RESOUND** – Reduction of engine source noise through understanding and novel design
- SOURDINE** – Study of optimisation procedures for decreasing the impact of noise
- TURBONOISECFD** – Turbomachinery noise source CFD models for low noise aircraft engine designs.

Bringing more women into science



The benefits of increased involvement of women in scientific research can be far-reaching, but this requires the introduction of change at various levels, including career guidance, mentoring schemes, networks and encouragement to apply for fellowships and posts.

The number of women in academia, research institutes, in industry and in senior scientific committees is consistently very small. In 1999, women had less than 20% representation on the programme committee and expert advisory group for the Growth Programme and across any of the Growth key actions. They registered about 15% participation in evaluation panels and were not represented at all on Growth monitoring panels.

Measuring women's participation

Nathalie Sauvonnnet, the recipient of a Marie Curie Scholarship, says, "Often, directors believe that it is not good to have women researchers as they will want to have children and so will be less available to work." A study carried out by Louise Ackers, Professor at the Department of Law, University of Lancaster, on "Women in TMR Marie Curie Fellowships (1995-1998)", showed that women comprised about one-third of applicants. Confidence, the importance of role models and mentors, and other factors all affected the likelihood of making an application.

Addressing under-representation

To redress the imbalance, the Commission is pursuing two objectives in relation to women and science: stimulating discussion among the Member States, and developing a coherent approach toward promoting women in research. The aim is to achieve at least a 40% representation for women in Marie Curie scholarships, advisory groups and assessment/monitoring panels.

Shaping scientific policy

The Commission has recently established a 'Women and Science' unit within the 'Science and Society' Directorate of DG Research, and is encouraging public debate on "Science, Society and the Citizen" via an online forum on the CORDIS website. Later this year, a conference entitled "Gender and

Research" will take place in Brussels (8-9 November 2001).

All eyes are now fixed on the proposed new FP (2002-2006), which promises more progress along three tracks: research by, for and on women:

- By** – participation of women in research;
- For** – a research agenda which meets female needs;
- On** – research on the gender issue.

A brief history of the 'women and science' activity:

- 1998 – Expert Group on Women and Science established;
- 1998 – "Women and Science" conference organised by the Commission;
- January 1999 – Women and Science unit created in DG Research;
- February 1999 – Communication "Women and science: mobilising women to enrich European research";
- June 1999 – Council Resolution states, "The question of under-representation of women in the field of science is a common concern for Member States and the Community...";
- November 1999 – First meeting of 'Helsinki group' the Women and Science national civil servants group;
- November 1999 – European Technology Assessment Network report "Science policies in the European Union: promoting excellence through mainstreaming gender equality";
- April 2000 – 'Women and Science: making change happen' conference;
- February 2001 – New Framework Programme (FP) proposal, taking into account gender dimension, adopted;
- May 2001 – Commission Staff Working Paper, "The gender dimension as a leverage for reforming science";
- November 2001 – 'Gender and Research' conference to be held in Brussels.

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Growth agenda

New Advisory Council

Commissioner Busquin has set up a new European Rail Research Advisory Council (ERRAC). Bringing together the rail industry, operators, infrastructure managers, public authorities, research institutes and academia, ERRAC's mission is to develop a Strategic Research Agenda for rail research. Preparatory meetings took place in June and July 2001. The first meeting of ERRAC is scheduled for 26 November 2001 in Cologne, on the occasion of the World Congress on Rail Research (<http://www.wcrr.de>), which will be opened by Commissioner Busquin.

Events

A new conference, entitled "European research for sustainable transport", is being organised by the Growth Programme, to take place in Valencia in May/June 2002.

The Growth Programme is also organising a conference entitled "Towards a European infrastructure for measurement and testing", to take place in Warsaw in June 2002.

Watch the Growth website for further developments on these conferences.

Calls for proposals

As part of the move to involve more non-EU participants in the Growth Programme, the European Commission is extending existing Growth contracts to include partners from the newly associated states. Organisations from those countries, including Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia, are being invited to apply for funding for inclusion in ongoing projects.

Proposals can be submitted for all Growth Programme activities, but only for running projects of the following types: RTD projects, demonstration projects, combined RTD/demonstration projects, concerted actions, thematic networks and specific accompanying measures for KA2. Proposals should be submitted by project co-ordinators, acting on behalf of existing participants, together with the new participants. The call was published on 3 September 2001 and will end on 13 December 2001.

See <http://www.cordis.lu/growth/calls/200202.htm>

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