



**COUNCIL OF
THE EUROPEAN UNION**

**Brussels, 7 August 2002
(OR. en)**

11384/02

**Interinstitutional File:
2001/0124 (CNS)**

LIMITE

RECH 138

LEGISLATIVE ACTS AND OTHER INSTRUMENTS

Subject : Council Decision adopting a specific programme of research, technological development and demonstration to be carried out by means of direct actions by the Joint Research Centre (2002-2006)

COUNCIL DECISION

of

adopting a specific programme of research,
technological development and demonstration to be carried out
by means of direct actions by the Joint Research Centre (2002-2006)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 166(4) thereof,

Having regard to the proposal from the Commission ¹,

Having regard to the Opinion of the European Parliament ²,

Having regard to the Opinion of the Economic and Social Committee ³,

Having regard to the Opinion of the Committee of the Regions ⁴,

¹ OJ ...
² OJ ...
³ OJ ...
⁴ OJ ...

Whereas:

- (1) In accordance with Article 166 (3) of the Treaty, Decision No.../..EC of of the European Parliament and the Council concerning the sixth multiannual framework programme of the European Community for research, technological development and demonstration activities, contributing towards the creation of the European Research Area and to innovation (2002-2006) ¹ (hereinafter referred to as the "framework programme") is to be implemented through specific programmes that define detailed rules for their implementation, fix their duration and provide for the means deemed necessary.
- (2) The framework programme is structured in three main blocks of activities, "focusing and integrating Community research", "structuring the European Research Area", and "strengthening the foundations of the European Research Area", within the first of which the direct actions conducted by the Joint Research Centre (JRC) should be implemented by this specific programme, while contributing in part to the aims of the other two.
- (3) In implementing its mission to provide scientific and technical support to Community policies, the JRC will contribute actively to establishing a Community system of scientific and technical reference, in particular by participating in networks comprising competent national institutions.
- (4) In implementing this programme in accordance with its mission, the JRC will place particular emphasis on the safety of the citizen, in terms of, for example, environmental protection, health care or protection against fraud.

¹ See p. ... of this Official Journal.

- (5) The rules for the participation of undertakings, research centres and universities and for the dissemination of research results, for the framework programme, adopted by the European Parliament and Council in Decision No.../..EC¹ (hereafter referred to as "the rules for participation and dissemination") should apply to this programme as regards dissemination of research results.
- (6) In implementing this programme, emphasis should be given to promoting mobility and training of research workers, and innovation, in the Community.
- (7) For the purpose of implementing this programme, in addition to cooperation covered by the Agreement on the European Economic Area or by an Association Agreement, it may be appropriate to engage in international cooperation activities, in particular on the basis of Article 170 of the Treaty, with third countries and international organisations.
- (8) In implementing this programme, special attention should be paid to the Candidate Countries. The JRC will make an active contribution to transferring the *acquis communautaire* in relation to the different policies of the Community.
- (9) Research activities carried out within this programme should respect the fundamental ethical principles, including those which are reflected in the Charter of Fundamental Rights of the European Union.

¹ See p. ... of this Official Journal.

- (10) Following the Commission Communication "Women and Science", the Council Resolution of 20 May 1999 on women and science ¹ and the Resolution of the European Parliament of 3 February 2000 on this scheme, an action plan is being implemented in order to reinforce and increase the place of women in science and research, and further enhanced action is needed.
- (11) This programme should be implemented in a flexible, efficient and transparent manner, taking account of relevant needs of JRC's user and Community policies, as well as respecting the objective of protecting the Community's financial interests. The research activities carried out under the programme should be adapted where appropriate to these needs and to scientific and technological developments.
- (12) The JRC will continue to meet the requirements of Community policies as reflected by its users. In order to do this effectively, it will maintain a suitable balance with research activities required for achieving scientific excellence.
- (13) The JRC should actively pursue activities in innovation and technology transfer.
- (14) In the implementation of this programme, the Board of Governors of the JRC should be consulted by the Commission in accordance with the relevant provisions of Commission Decision 96/282/Euratom of 10 April 1996 on the reorganisation of the Joint Research Centre ².

¹ OJ C 201, 16.7.1999, p. 1.

² OJ L 107, 30.4.1996, p. 12.

- (15) The Commission should in due course arrange for an independent assessment to be conducted concerning the activities carried out in the fields covered by this programme.
- (16) The Board of Governors of the JRC has been consulted on the scientific and technological content of this specific programme,

HAS ADOPTED THIS DECISION:

Article 1

1. In accordance with Decision No .../.../EC (hereinafter referred to as "the framework programme"), a specific programme related to direct actions of research, technological development and demonstration to be carried out by the Joint Research Centre (hereinafter referred to as "the specific programme") is hereby adopted for the period from [.....] to 31 December 2006.
2. The objectives and scientific and technological priorities for the specific programme are set out in Annex I.

Article 2

In accordance with Annex II to the framework programme, the amount deemed necessary for the execution of the specific programme shall be EUR 760 million. An indicative breakdown of this amount is given in Annex II to this Decision.

Article 3

1. The Commission shall be responsible for the implementation of the specific programme.
2. The specific programme shall be implemented by means of the instruments defined in Annexes I and III to the framework programme and in Annex III to this Decision.
3. The rules for the participation of undertakings, research centres and universities and for the dissemination of research results (hereinafter referred to as "the rules for participation and dissemination") set out in Regulation (EC) No .../2002 of the European Parliament and of the Council ¹ shall apply to the specific programme, as regards dissemination of research results.

Article 4

1. The Commission shall draw up a work programme for the implementation of the specific programme, which shall be made available to all interested parties, setting out in greater detail the objectives and scientific and technological priorities, set out in Annex I, and the timetable for implementation, and the implementation arrangements.
2. The work programme shall take account of relevant research activities carried out by the Member States, Associated States, European and international organisations. It shall be updated where appropriate.

¹ See p. ... of this Official Journal.

Article 5

For the purposes of implementing the specific programme, the Board of Governors of the JRC shall be consulted by the Commission in accordance with Commission Decision 96/282/Euratom of 10 April 1996 on the reorganisation of the Joint Research Centre ¹.

The Commission shall regularly inform the Board of Governors of the implementation of this specific programme.

Article 6

1. The Commission shall regularly report on the overall progress of the implementation of the specific programme, in accordance with Article 4 of the framework programme; information on financial aspects shall be included.
2. The Commission shall arrange for the independent assessment provided for in Article 6 of the framework programme to be conducted concerning the activities carried out in the fields covered by the specific programme.

Article 7

This Decision is addressed to the Member States.

Done at Brussels,

For the Council
The President

¹ OJ L 107, 30.4.1996, p. 12.

SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES AND BROAD OUTLINES OF THE ACTIVITIES

1. INTRODUCTION

The JRC carries out its work programme with the mission to provide customer-driven scientific and technical support for the conception, implementation and monitoring of European Union policies. The JRC serves the common interest of the Member States while being independent of special interests, private or national, and as such provides support when there is a need for European intervention.

The JRC's contribution to the Framework Programme incorporates recommendations of recent evaluations of the JRC and requirements necessitated by the Reform of the Commission. In particular, it includes:

- a strengthened user-orientation;
- networking activities to create a broad knowledge base and, in the spirit of the European Research Area (ERA), more closely associate Member and Accession State laboratories, industry and regulators in the S&T support provided to the EU policies;
- the concentration of activities on selected themes; the training of researchers using, in particular, large-scale facilities and specialised laboratories.

It responds to clearly expressed needs and requirements, notably from the Commission services, which have been identified and are updated through systematic and regular contacts ¹.

In its areas of competence, the JRC's contribution will aim at establishing synergies with the relevant thematic priorities in the other specific programmes, notably through seeking complementarity between indirect and direct actions and through participation in the indirect actions, with a view to adding value, when appropriate, to the work carried out therein (e.g. through the comparison and validation of tests and methods or the integration of results for policy-making purposes).

The political and institutional context in which the JRC operates has evolved significantly in recent years. Rapid technological developments especially in biotechnology and the information society are changing our society with new demands on policy-makers simultaneously to protect the citizen and ensure competitiveness in a global economy. Crises in consumer confidence and the growing impact of technology on day to day life have placed the onus on policy-makers throughout Europe and the world to secure reliable scientific input throughout the whole policy process. This encompasses the ability to respond rapidly in the event of unforeseen circumstances and to take a more responsible view of potential longer-term impact of science and technology developments. The development of common European systems of scientific and technical reference, as foreseen in the ERA, is an important step in this direction.

¹ Annual users' workshops, interservice group of users' DGs, bilateral agreements, in association with the High Level Users' Group

With the implementation of the JRC's refocused mission to support EU policies ¹, the Framework Programme represents a new chapter in how the JRC will perform its activities. On its own, the JRC cannot be expected to cover the whole spectrum of scientific and technical support needed in such a context. Three characteristics permeate its proposed work programme: (i) concentration, (ii) openness and networking and (iii) customer-orientation. Appropriate instruments will be set up to meet those objectives with particular attention to the clustering of projects contributing to specific policy areas (see Annex III).

The JRC, as the in-house RTD service of the Commission, will

- provide demand-led S&T support to European policy formulation, development, implementation and monitoring in its areas of competence,
- contribute to the establishment of common scientific and technical reference systems within the ERA.

The thrust of the JRC's support to EU policies lies in the provision of technical support on issues related to environmental protection, safety and security of the citizens and sustainable development. This includes risk assessment, testing, validation and refinement of methods, materials and technologies to support a whole gamut of policies ranging from safety of food products, chemicals, air quality, water quality, nuclear safety, to protection against fraud. Almost all this support will be carried out in close collaboration with laboratories and research centres in Member States and elsewhere. To achieve this, the JRC has refocused its non-nuclear activities upon two core areas, supported by horizontal competencies:

- food, chemical products and health,
- environment and sustainability.

¹ Fulfilling the JRC's mission in the ERA. Communication from the Commission to the Council and European Parliament.

The core areas will be complemented by horizontal activities as follows:

- technology foresight,
- reference materials and measurements,
- public security and anti-fraud.

2. Programme content

2.1. Food, chemical products and health

The health protection of consumers particularly from the potentially harmful effects of contaminants in food and of chemical products is a key European policy. This is evidenced by the creation of a European Food Authority and the development of a new Community policy on chemicals.

In the 2002-2006 framework programme the JRC will respond to a series of specific requirements associated with:

- the rapidly evolving Community food and chemical policies,
- the objectives of the precautionary principle,
- public concerns relating to health.

It will develop further as a scientific reference and validation centre in selected areas linked to the quality and safety of food, the safety of chemical products, the Community dimension of chemical measurement/metrology infrastructure and health-related information. The JRC's strategy relies heavily on extensive networking with laboratories in the Member States, on the maintenance of advanced analytical facilities and reference measurement and material production and on expanded competencies in life sciences including proteomics and bioinformatics. Services such as information systems, data banks (e.g. molecular register) will be provided in support to relevant EU policies. Given the novelty of many issues and the complexity of the regulatory environment, training will also be a priority. Work will be focused upon the following priorities:

- food safety and quality,
- genetically modified organisms,
- chemical products,
- biomedical applications.

Food safety and quality

Emphasis will be on the development and validation of reliable methods and reference materials for the detection of contaminants (natural such as mycotoxins and man-made such as PCBs), residues (e.g. pesticides, growth hormones and veterinary drugs) and ingredients and additives in food as well as in animal feed. The JRC's prime role will be the coordination of testing of methods and materials and the submission of approved results to support risk assessment and management (in close support to the European Community Reference Laboratories for Veterinary Residues). As most food-borne diseases derive from microbiological including virus contamination, emphasis will be placed on evaluation of new approaches for rapid identification and monitoring. Research on genomics and proteomics will identify the cause of many food-related problems such as allergenicity, and the nature of TSE diseases. The JRC will maintain flexibility to deal with new public health issues as they arise and will establish additional efforts in the area of microbiology.

Standardisation of tests and evaluation of new methods for sensitive detection of BSE and TSE will involve the implementation of quality control of large scale post-mortem testing in abattoirs in collaboration with relevant DGs, TSE Ad-hoc Scientific Committee and leading TSE research laboratories. The JRC will investigate the fate of specific risk material. Special emphasis will be put on safety aspects of animal feed being the prime route to the food chain.

Food quality will grow in importance due to the relationship between health and food. Apart from assessment of compliance with labelling (detection of frauds and adulteration) there is a strong need to judge the efficacy and/or side effects of food supplements and functional food. The growing popularity of organic food requires the availability of suitable methods to assess authenticity. The JRC will focus its expertise in the area of food authenticity towards the emergence of "nutraceuticals" and their effectiveness.

Technological prospective research will be conducted on the development of food products, sustainable methods of farming and food production processes, and on the impact of food safety policies in the agri-food sector.

Genetically modified organisms (GMOs)

The JRC will provide considerable scientific and technical support in the field of the presence of GMOs in food and environment. This support will be carried out in the context of the European network of GMO laboratories, coordinated by JRC at the request of Member States. Tasks will include development and validation methods for GMO detection, identification and quantification, increasing the range of certified reference materials (new species, processed food), development of biomolecular databases, and training. Research activities (e.g. on sampling and traceability) focusing on novel varieties of food and feeds or on tackling the problem of species unauthorised for use in the EU will be performed to underpin regulatory needs and to achieve pan-European harmonisation.

The study of GMOs in the environment will require the building of new competencies to deal with the genetic, biodiversity and agronomic aspects of introducing new organisms in the environment.

Chemical products

The new Community policy on chemicals will impact strongly on the support required of the JRC ¹ throughout this Framework Programme. The role for the JRC will encompass operating an expanded scheme to regulate chemicals; this will reinforce the already close links with relevant Member State authorities, industry and with international bodies, e.g. the OECD. The risk assessment experience and expertise of the European Chemicals Bureau will also provide a solid foundation for significant research effort in this area.

¹ includes work of the European Chemicals Bureau of the JRC.

The validation of alternative methods for animal testing will increase in importance in support of the new testing programme of the new chemicals policy. Research will also take place on the safety of vaccines and on the challenging area of the long-term effects of repeated low doses of potentially hazardous substances.

Exchange of validated information through telematic means on health and medicines between regulatory bodies in EU Candidate Countries and diffusion to all user-groups including consumers and patients are being pursued.

The JRC will contribute to risk assessment on existing dangerous substances with attention paid to the migration of harmful compounds from materials in contact with humans and food, e.g. plasticisers in toys and the harmful effects of cosmetics. Prospective analyses of the relations between Community policies and innovation and competitiveness of the European chemical industry will also be undertaken.

Biomedical applications

An ageing population will inevitably change the profile of demand on EU health systems. The JRC plans to apply its expertise in materials and life sciences on the biocompatibility and long-term reliability of implants and on the use of optical techniques in minimally invasive medical systems. This work necessitates networking with research laboratories, hospitals, industry and regulatory authorities. The JRC will also work towards a globally accepted system for clinical diagnostic measurement in collaboration with the International Federation of Clinical Chemistry (Directives on In-Vitro-diagnostics and Medical Devices).

The JRC's nuclear and isotopic facilities and competencies in the production and use of radioactive stable isotopes will also be used for medical purposes as in new types of cancer therapies (α-immunotherapy, Boron Neutron Capture Therapy) as well as in clinical reference materials.

2.2. Environment and sustainability

The quality and use of water, air and soils, the sustainable use of energy and the threat of global warming are concerns of growing political attention. Community policy developments in those fields call for adequate knowledge of causes, processes, impacts and trends. The JRC defines its programme in a manner which takes direct account of those requirements. It will thereby consolidate its role as a centre of knowledge and reference in environmental matters of significant European dimension. It will do so by becoming increasingly involved in reference networks with Member States and internationally, particularly in the Candidate Countries. Service to the policy-making process will be strengthened by developing a closer partnership with the relevant Commission services and by pursuing cross-policy, techno-economic prospective research. Attention will also be given to reinforcing the synergy with the European Environment Agency with particular attention to the diffusion of scientific results. The programme will cover the following areas:

- assessing and preventing adverse global change,
- protection of the European environment (air, water and terrestrial resources),
- contributions to sustainable development (new and renewable energies, environmental assessment),
- support to Global Monitoring for Environment and Security (GMES).

Assessing and preventing adverse global change

The JRC will provide support to the development of the EU's strategy to combat global warming, making use of its combined technical, socio-economic, modelling and research skills. The implementation of the Kyoto Protocol necessitates the understanding of the causes and processes controlling greenhouse gas cycles. A priority for the JRC will be the direct support of the EU monitoring mechanism of greenhouse gases (Council Decision 1999/296/EC)¹. Closing gaps of knowledge by specific research contribution will be a critical part of the role of the JRC in this context. Work will focus on the establishment of a reference system which will enhance data quality and reduce uncertainty. A critical part of this is the monitoring of changes in land cover, land use and forestry at various scales (see also GMES). Energy scenarios for the future as well as carbon emission forecasts are also crucial to the implementation of relevant measures. Policy options to reduce emissions in a cost-effective way will also be investigated. To maximise its efforts, the JRC will conduct its global change activities in a dedicated cluster. Issues associated with climate policy implementation, carbon sequestration, atmospheric quality measurements, the dynamics of ozone and UV radiation over Europe could also be examined.

¹ OJ L 117, 5.5.1999, p. 35.

Protection of the European environment

- Preserving air quality

Air pollution is a key concern for the European citizen and is also the focus of a large body of regulatory instruments (e.g. Clean Air for Europe Programme). The cornerstones of JRC's efforts will be:

- the assessment of emissions by vehicles and stationary sources (new emission directives, standards for diesel/gasoline, new fuels, particulate matter and dioxin emissions; harmonisation/standardisation of world-wide reference test cycles and of measuring methods for industrial emissions),
- the provision of reference for the implementation and the development of air quality directives (analysis quantification of air pollution, monitoring, techniques, pre-normative work, methods for evaluating the impact of air quality policies on human exposure and modelling tools for data analysis and comparisons of abatement scenarios),
- the assessment of the public health impact of atmospheric pollution, in particular in urban areas.

Cross-sectoral integrated analysis of the transport, energy, health and enterprise policies will be conducted to determine their effect on emissions and ambient pollution levels. The work will be conducted in the context of large networks of experts including representatives from the automotive and energy industries.

Water quality

Water is a key resource issue of the future; maintaining natural water sources and securing good quality drinking water are of particular relevance. The Framework Directive on Water will oblige coordination and harmonisation of monitoring and reporting processes of all Community regulatory existing instruments during the next six years. Research leading to the harmonisation of a common database on reports by Member States on implementation of various water-related directives (e.g. residual urban water, nitrates, surface water, etc.) will be pursued. The JRC will focus on the determination of ecological water-quality parameters (also in the context of supporting existing generic European metrological infrastructure), identification of significant pollutants, indicators of quality in inland and coastal waters and on the identification of microbiological hazards, especially in waste waters as well as on socio-economic implications of the new regulatory framework. In this context, the JRC activities should contribute to research aimed at integrating improvements in water quality, waste water treatment, soil quality and their impact on health. Impacts on health are addressed under "Food Safety and Quality" in section 2.1 of this programme. Integrated coastal zone management research will be pursued to provide Community reference approaches.

Terrestrial resources

The soils and the landscapes are the site of most human activities and their characteristics are determined by management practices. The environmental component of the agricultural policy as well as several pieces of Community legislation (e.g. Water Directive, Spatial Development Perspective, Urban Agenda, Climate Change and others) deal with a range of those issues. The JRC will provide support to the development of a common platform for integrated spatial analysis as a basis for policy making and evaluation. Catchment areas will be used as units of study for evaluating various processes and impacts. The extensive database managed by the European Soils Bureau will be expanded through networking; the ongoing collaboration with Eurostat will also be reinforced. Attention will be paid to the development of tools and to providing information on natural landscapes in the context of forestry, land use and biodiversity conservation. Support to the environmental component of the common agricultural policy will be provided in terms of landscape analysis and use of indicators. Information on the state and changes in urban and regional environment will be produced. Work will rely upon the use of advanced remote sensing techniques, geographical information systems and modelling of spatial processes.

Contributions to sustainable development

Work on sustainable development pervades the whole JRC programme and attention is paid to the integration of economic, social and environmental dimensions. Work on such integration will particularly concern sustainable development and the role which the different actors are called upon to play.

The JRC will develop in particular an active programme aimed at knowledge and information-dissemination (including the ability to support research workers and operators in the field) on effective practices for implementing sustainable development. The development of methodologies and tools for integrating development and biodiversity and/or landscape conservation will be taken into account.

The JRC will draw on its experience in the further development of a European network of the different ecosites set up in a number of Member States in recent years.

- Energy and energy savings

The Kyoto protocol has given a critical dimension to the energy debate since energy use and transport, two cornerstones of economic life, have major impacts on the emission of greenhouse gases. The importance of new and renewable energies as well as of energy efficiency and technology for the security of supply has been underlined in a recent Green Paper and in a Communication on "Renewables".

The JRC experience in the field of renewables, energy policy and energy technology will be exploited to provide support to emerging Community issues in a deregulated market; a concentration on the following areas of work is foreseen:

- development of reference systems – through accredited laboratory and certification schemes – in renewable energy production (with priority on solar electricity), storage and energy use in buildings,
- technology assessment, energy-saving options, validation and modelling activities of new and conventional energy technologies with particular reference to safety, efficiency, energy savings, waste and biomass generated power technologies as well as waste incineration performances,

- energy scenarios and forecasting in the context of greenhouse gases emissions and market assessment for new and renewable energy technologies in a competitive energy economy.

Environmental assessment

The need for an "integrated" assessment of environment quality is increasingly recognised. The JRC will support the EU Sustainable Development strategy through the development of appropriate integrated policy assessment tools and through activities leading to the integration of environmental concerns in EU policies. The European Integrated Pollution Prevention and Control Bureau will continue its directive-linked work on assessing best available technologies with a view to reducing pollution in selected industrial sectors. Complex emission scenarios are needed to link air pollution and global change. Waste management is an important area where an integrated analysis from waste generation to treatment and disposal is necessary. Environmental integrity and human health is another area of integrated studies to which the JRC will contribute. New assessment tools and approaches to eco-toxicology will be developed to address topics such as air pollution and contaminants in waters (endocrine disruptors, biocides and pharmaceuticals). The JRC will also provide methodological support to the integration of the environmental dimension in development assistance.

The JRC will contribute to the fulfilment of Community legislation for exchanging environmental monitoring data (including radioactivity) and information (through model intercomparison) under routine and emergency conditions.

A focus on inter-policy linkages and impacts will be retained by JRC as a specific contribution to the implementation of sustainable development practices at Community level.

Support to GMES

The need for independent information on key issues affecting the world's environment and the security of the citizen is increasingly recognised. GMES is a European initiative towards the implementation of operational services for collecting, analysing and disseminating a range of information items related to changes in environmental quality, resource availability and management, natural risks and hazards. The GMES is being implemented under the dual concern of preserving the global environment and reducing or anticipating threats to the security of the citizen. It focuses primarily on the use of earth observation techniques for maintaining an adequate long-term watch on key landscape parameters (such as land cover, use, resource degradation or depletion) at various geographical levels. It will also call for techniques to support the assessment of natural risks and the management of catastrophic events. The JRC will focus on the development of EU-policy relevant applications which feed into the GMES concept in three areas of work: support to international environmental agreements, assessing risks and hazards and evaluating environmental stress.

2.3. Technology foresight

Increasingly, the definition of EU policies is dependent on the timely anticipation and understanding of developments in science and technology and the social and economic environment. The JRC's expertise in analysing inter-relationships between technology and society and its experience in coordinating cross-sectoral and multidisciplinary foresight research on an international scale will contribute to the implementation of the objectives of the ERA. Throughout the 2002-2006 framework programme, the JRC's activities in this research area will be based on a close collaboration with DG RTD and other customer DGs. The activity will focus on:

- techno-economic foresight,
- international foresight cooperation forum.

Techno-economic foresight

The JRC will undertake medium to long-term prospective studies on crucial technological developments affecting the EU and the relevant impact on growth, sustainable development, employment, social cohesion and competitiveness. This activity will also provide background analysis and information that will be valuable in the implementation by the JRC of its work in its specific areas of competence. It will include prospective analysis to identify technological bottlenecks and opportunities, including quantitative estimations; identification of promising technologies and the conditions required for their uptake.

International foresight cooperation forum

The JRC will strengthen its working relationships with international think-tanks and top level advisors, by following up existing successful experiences (e.g. the European Science and Technology Observatory network, the High-Level Economists Group) and by pursuing the establishment of an International foresight cooperation framework. The availability of a mechanism to share analysis on the main emerging challenges will in particular prove useful in promoting Europe's role in the international debate on science and governance. A common reference system in policy-oriented foresight analysis will be established in the context of regional exercises with particular attention to Candidate Countries.

2.4. Reference materials and measurements

Recognition of standards and measurements in products is an important component for the implementation of Community policies related to consumer safety, free trade, competitiveness of European industry and external relations. The JRC will further support the existing or developing European metrological infrastructure to produce results of demonstrated quality, develop specific reference measurements, produce certified reference materials (CRMs) to improve their global acceptance, organise international measurement evaluation programmes and will establish trans-national databases in support to EU policies. Throughout the JRC's work programme, agreed reference methods and materials are required, whether in environment, food safety, public health or the nuclear industry. In addition to work described in the previous sections, the JRC plans to support the creation of a European Certified Reference Material system. This will put the JRC in a position to provide sound advice to Commission services where applicable to EU legislation and practice. The activities will cover:

- BCR ¹ and industrial certified reference materials,
- Metrology in chemistry and physics.

¹ Bureau communautaire de référence.

BCR and industrial certified reference materials

This activity concerns developing concepts and techniques for the production and certification of reference materials to improve their global acceptance under the EU-US Mutual Recognition Agreement, where the JRC advises DG TRADE. The JRC will concentrate on production of BCRs and new CRMs for control of industrial processes and products. As support to DG RTD, the JRC will, where feasible, extend its responsibility for storage and distribution of BCR to the management of the production and certification of new CRMs from indirect actions. Nuclear reference materials used for safeguards and nuclear materials accountancy will be expanded to the environment.

Metrology in chemistry and physics

The information generated by studying the interactions of neutrons with matter is fundamental to many applications areas. Infrastructures will be maintained to investigate basic metrology in physics in a systematic manner over a wide energy range, emphasising its relevance for training. The radionuclide metrology activity provides support to food, chemical and environmental safety. The JRC will continue to represent the Commission in international bodies responsible for the development of a world-wide chemical measurement system. Strategic tasks will include the development of primary measurement techniques, the production and certification of isotopic reference materials and organisation of International Measurement Evaluation Programmes. Topics depend on EU policy requirements and evaluations rely heavily on the participation of numerous laboratories, especially those which have a reference role to play in their sector or region. Through the establishment of networks (PECOMet-Network and MetMED) support will be provided to Candidate Countries and Mediterranean countries to build up a structured measurement system in chemistry.

2.5. Public security and anti-fraud

Public security issues – proliferation of weapons of mass destruction, the globalisation of the economy, infringements to privacy and Internet vulnerabilities, risks from natural or technological disasters – require a coordinated international approach. The EU is providing a framework through a number of mechanisms and at the same time it has declared zero tolerance on fraud. These political initiatives and commitments need scientific and technical support and the JRC is shaping its programme to answer directly some of those specific requirements. The JRC has, over the years, developed a broad-based and well recognised expertise in the general domain of security and anti-fraud, in the handling of large information infrastructures and in dealing with complex systems. In the 2002-2006 framework programme, such expertise will be provided to user European institutions according to their priorities and needs. Increased emphasis will be placed on exploiting networks with other research institutions and stakeholders in order to deepen and widen the support. The JRC will concentrate on the following issues:

- international humanitarian security,
- natural and technological hazards, risks and emergencies,
- cyber-security,
- monitoring compliance with EU regulations and fraud control.

International humanitarian security

The JRC will maintain a focus on technical aspects of EU efforts in humanitarian demining, firstly to improve knowledge of existing technology for minefield survey and detection through testing and benchmarking, secondly to assess new technologies and thirdly to increase the visibility, transparency and efficiency of EU mine action operations.

The JRC, through the GMES initiative, will also contribute to developing a European capability that allows integrated space-based data, environmental data and socio-economic data to be made available for European security policies, including humanitarian aid, on a timely basis.

Natural and technological hazards, risks and emergencies

The JRC will continue to support efforts to develop a European framework for forecasting, assessing, managing and reducing risks in the Community. In the 2002-2006 framework programme, the JRC will further develop a system approach to the management of natural and technological hazards. For technological risks – from aircraft incidents and industrial hazards – the JRC's efforts will be centred round its operation and improvement of harmonised European monitoring systems (ECCAIRS ¹, MAHB ², EPERC ³) which will be further extended to the Candidate Countries. For natural hazards, the JRC will endeavour to provide Europe with a similar capability. At the same time, efforts to develop a common European approach towards floods and forest fires will continue through a focus on integration of advanced modelling, conventional and space-based data. A link to the GMES initiative will be developed. Various networks, such as the European network of earthquake engineering laboratories, will be extended to international level. Similarly, the JRC in collaboration with European partners will set up a network of experimental facilities to develop a common integrated initiative for structural safety.

¹ European Coordination Centre for Aircraft mandatory accident Reporting Systems.

² Major Accidents Hazard Bureau.

³ European Pressure Equipment Research Council.

The JRC will use its internal scientific potential and its relations with scientific networks to contribute to establishing a support mechanism for decision-making in risk management.

Cyber-security

The JRC will build on experience gained in supporting the EU's dependability initiative, out-of-court dispute settlement systems as well as the observatory on electronic payment systems. Working closely with the Commission services responsible and Member State organisations, it will support the development of an appropriate EU response to risks of cybercrime, privacy and Internet vulnerabilities. Efforts will concentrate on methods for better characterising these risks, on criteria for evaluating technical countermeasures and on testing them in JRC facilities and on developing appropriate and harmonised measures, indications and statistics in consultation with other interested parties, including Europol. The JRC will also maintain an Internet website on the issue of cybercrime and report its progress to the EU Forum established in the framework of the Commission Communication on "Creating a safer information society by improving the security of information infrastructures and combating computer-related crime".

Monitoring compliance with EU regulations and fraud control

The JRC supports the Commission's efforts to increase the effectiveness of anti-fraud measures, both by providing advanced technologies to bodies that operate at EU level and by supporting Member States in the use of the latest technologies. The JRC, working closely with the Commission services concerned, will maintain appropriate support to the Common Agricultural Policy, the Common Fisheries Policy and the European Anti-Fraud Office (OLAF). As well as exploring the application of new technologies – DNA analysis for livestock identification, satellite image interpretation for crop acreage monitoring or fishing vessel identification, cross-correlation of isotopic analysis of beverages and foodstuffs to determine contents and origin, intelligence gathering from open sources, language technology to analyse multilingual documents – the JRC will continue to provide customers with the integrated knowledge that includes the entire cycle from data capture, data fusion, data mining through to visualisation and estimation.

The JRC will also build on its methodological experience to provide the policy process with timely, reliable and more socially robust information. This will be achieved for official statistics through the coordination, with Eurostat, of thematic research networks with emphasis on short-term indicators, business cycle and financial analysis and through the development of a quality assurance methodology for scientific input to governance.

Increased importance will be devoted to early warnings and trend detection, dissemination, awareness-raising and knowledge-sharing with partner laboratories in the Member States. The fraud problem will not be tackled on an individual case basis but at a system level – developing procedures and regulations that involve less bureaucracy and that are intrinsically less prone to fraud.

INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY
FOR THE EXECUTION OF THE SPECIFIC PROGRAMME

| Activity | Amount (EUR million) |
|--|----------------------|
| | |
| Food, chemical products and health | 212 |
| Environment and sustainability | 286 |
| Horizontal activities | 262 |
| – Technology foresight; Reference materials and measurements; Public security and antifraud ¹ | |
| – Research Training; Access to Infrastructures ² | |
| Total | 760 ^{3 4} |

-
- ¹ Up to EUR 222 million will be devoted to this activity.
² Up to EUR 40 million will be devoted to this activity.
³ Of which approximately 6% may be allocated to exploratory research and up to 2% to exploitation of own JRC results and technology transfer.
⁴ This total includes the JRC's budget contribution necessary for its participation in indirect actions.

SPECIFIC RULES FOR IMPLEMENTING THE PROGRAMME

1. The Commission, after consulting the Board of Governors of the JRC, shall implement the direct action on the basis of the scientific objectives and contents described in Annex I. The activities relating to this action shall be performed in the relevant institutes of the JRC.
2. In the implementation of its activities, the JRC will, whenever appropriate and feasible, participate in, or organise, networks of public and private laboratories in the Member States or European research consortia supporting the European policy-making process. Particular attention will be paid to cooperation with industry, especially with small and medium-sized enterprises. Research bodies established in third countries may also cooperate on projects, in accordance with the relevant provisions of Article 6 of the Framework Programme and, where applicable, of agreements for scientific and technological cooperation between the Community and the third countries concerned. Particular attention will be paid to cooperation with research laboratories and institutes in the Candidate Countries and countries of Central and Eastern Europe and the former Soviet Union.

The JRC will also use appropriate mechanisms continuously to identify the requirements and needs of its customers and users and to involve them in the related activities.

The knowledge gained through implementation of the projects will be disseminated by the JRC itself (taking into account possible limitations due to confidentiality issues).

3. The accompanying measures shall include:
 - organisation of the visits of JRC staff to national laboratories, industrial laboratories and universities,

- the promotion of mobility of young scientists, particularly from the Candidate Countries, with particular attention to encouraging the participation of women,
 - specialised training in support of the elaboration and/or implementation of the European policies with the emphasis on multidisciplinary,
 - the organisation of visits to JRC institutes of visiting scientists and seconded national experts, particularly from Candidate Countries, with particular attention to encouraging the participation of women,
 - systematic exchange of information, through, inter alia, the organisation of scientific seminars, workshops and colloquiums and scientific publications,
 - the independent scientific and strategic evaluation of the performance of the projects and programmes.
-