EUREKA

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BRINGING
EUROPEAN INNOVATION TO
A WORLD MARKET

THE EUREKA INITIATIVE

ANNUAL REPORT
2003-2004

CHAIRMANSHIP (July 2003 to June 2004)
France [FR]

MEMBERS
Austria [AT], Belgium [BE], Switzerland [CH], Serbia and Montenegro [CS], Cyprus [CY], Czech Republic [CZ], Germany [DE], Denmark [DK], Estonia [EE], Spain [ES], European Union [EU], Finland [FI], United Kingdom [GB], Greece [GR], Croatia [HR], Hungary [HU], Ireland [IE], Israel [IL], Iceland [IS], Italy [IT], Lithuania [LT], Luxemburg [LU], Latvia [LV], The Netherlands [NL], Norway [NO], Poland [PL], Portugal [PT], Romania [RO], Russian Federation [RU], Sweden [SE], Slovenia [SI], Slovakia [SK], Turkey [TR]

NATIONAL INFORMATION POINTS
Albania [AL], Bulgaria [BG], Ukraine [UA]

ASSOCIATE COUNTRY
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CHAIRMANSHIP
MEMBERS
NATIONAL INFORMATION POINTS
ASSOCIATE COUNTRY

Jean-Paul Jacamon, High Level Group Chairman of the French Chairmanship Year 2003 to 2004

During the French Chairmanship Year (July 2003 to June 2004), the Network has achieved a new record in EUREKA's history: more than 200 new innovative projects for a total budget of €518 million. Furthermore, six new strategic initiatives, so-called 'Clusters,' have been launched. Two are continuations of existing ICT Clusters, the four others increase the diversity of Cluster themes: CELTIC (telecommunications), EUROGIA (clean energy), INSYSBIO (integrative systems biology) and NEWMEDFASTER (accelerated pharmaceutical development). These successes have been achieved in addition to a streamlining of the structure of EUREKA's governance and the implementation of a Network-level assessment methodology for all new projects.

When Denmark took over the EUREKA Chairmanship in July 2002, one of its key objectives was to develop a three-year programme that would give the Initiative the necessary gravitas and continuity to work with players such as the European Commission and private investors. Hence the creation of a *Troika* – composed of the previous, the current and the future Chairs – to carry on the reform successfully.

Based on this programme, the French Chair has focused on a number of practical ideas and proposals. For instance, the streamlining of the organisation of EUREKA; the standardised ex-ante assessment of projects; the enhancement of the Initiative's relationship with industry and, of course, its increased visibility and defined role within the European Research Area (ERA).

Where do we stand today?

As regards governance, qualified majority voting has been enshrined in our statutes. This change should ease and accelerate the decision-making process in our 34-member organisation. Through these measures, "*...the simplicity of EUREKA, its flexibility and the speed of its procedures,*" as praised by French Research Minister François d'Aubert at the 2004 XXIst EUREKA Ministerial Conference, will now be maintained.

As a result of the implementation of a harmonised Network-level ex-ante evaluation tool – PAM (Project Assessment Methodology) – the quality of EUREKA projects will be further improved. This important step will give EUREKA participants more clout and credibility to attract both public and private funding.

Efforts continue to stimulate the generation of new projects and Clusters. As French Minister for Industry Patrick Devedjian recently acknowledged, this year has been "*extremely rich in terms of projects.*" We owe this richness in projects to the dynamism, creativity and competitiveness of our Network members. Thanks to our 'bottom-up' approach, EUREKA has also successfully motivated Europe's strategic industrial domains into forming new Clusters such as CELTIC, EUROGIA, NEWMEDFASTER and INSYSBIO.

Finally, we have progressed in gaining visibility within the ERA. Joint Technical Groups (JTG), involving the European Commission and EUREKA, have been set up with the goal of strengthening synergies between the EUREKA Initiative and the EU Framework Programme. These JTGs cover thematic priority areas including ICT, life science, nano-materials and sustainability. Our cooperation will be reinforced during the preparation of the 7th Framework Programme, through the exploration of concrete financing mechanisms that will allow EUREKA and the Commission to operate in a more coordinated way.

It is now to the Dutch Chair that we must turn to continue the good work. I would like to thank the Network for its effort and wish it every success in the years ahead.

THE EUREKA LYNX AND LILLEHAMMER AWARDS

The EUREKA Initiative helps European industry to fulfil its potential in the world market by promoting collaborative, market-oriented, innovative partnerships. The EUREKA Lynx and Lillehammer Awards are just two of the many practical ways in which we do this.

Transforming a groundbreaking idea into a successful product requires vision, commitment and persistence. All the more so for Europe's many SMEs, research institutes and universities, hard at work advancing the frontiers of technology.

Such organisations play a crucial role in keeping European industry competitive, creating jobs and enhancing our economic prosperity, as well as working towards a better environment and sustainability.

In recognition of this, the annual Lynx and Lillehammer Awards were launched. The Lynx Award pays tribute to the achievements of an SME that has recently brought a successful innovative venture to the market. The Lillehammer Award recognises a project with outstanding environmental benefits.

2004 Lynx Award: Mesatronic

A world leader with 64 employees and an annual turnover of €9 million

Mesatronic in Grenoble, producer of probe cards for testing silicon wafers, was presented with the Lynx Award at the 2004 EUREKA Ministerial Conference.

This French SME, created in 1993 with two members of staff and an annual turnover of €100,000, has exhibited remarkable growth: it is now amongst the top 12 world leaders in its field with 64 employees and an annual turnover of €9 million.

Around €3 million of current turnover and 30 jobs are directly attributable to Mesatronic's participation in EUREKA project E! 2277 NEWTECT. Together with Italian, French and Swiss partners, the company developed D.O.D. (Die On Die) Technology™, a probe card technology based on a semiconductor process for testing the new generation of increasingly complex and miniaturised high density silicon wafers. D.O.D. Technology™ is now recognised as one of the best in the world.

"*Our idea had great market potential, but we lacked funding and know-how,*" says Managing Director and CEO of Mesatronic, André Belmont. "*EUREKA, with its unique industry-oriented approach, gave us this opportunity.*"

2004 Lillehammer Award: E! 1489 EUROTRAC-2

An international network of scientists is the driving force in EU policy on air pollution

Established by the Norwegian Chair in 1994 to recognise a project that has outstanding environmental benefits, the 2004 Lillehammer Award was presented to participants in the EUREKA project E! 1489 EUROTRAC-2.

E! 1489 EUROTRAC-2 is the EU's largest-ever study of atmospheric pollution. The project has significantly advanced understanding on where pollutants are created, how they travel and their impact on human and environmental health. Through 14 sub-projects involving over 300 participants from 30 countries, EUROTRAC-2 has helped to forge consensus and defeat scientific uncertainty. This is imperative in order to connect science and policy-making and to shape environmental legislation in Europe.

"EUROTRAC-2 helped coordinate national research programmes within Europe in close cooperation with the European Commission, contributing to a European consensus on environmental strategies," says Dr Pauline Midgley of the National Research Centre for Environment and Health (GSF), Germany, who coordinated the project. *"Its approach – a bottom-up structure overseen by respective committees – has created a new European dimension in atmospheric research."*

INTRODUCTION

EUREKA's primary goal is to raise the productivity and competitiveness of Europe's industries and national economies in the world market. To reach this goal, substantial public and private funding has been mobilised over nearly two decades in support of the research and development carried out within the EUREKA framework.

To date, 1600 projects have been completed for a total value of over €17 billion. In addition, the value of ongoing projects exceeds €2.5 billion for EUREKA Clusters (mainly in the Information Technology field) and €2 billion for innovative projects.

The EUREKA evaluation system, established in 1995, includes information from over 70% of finished projects. It provides strong evidence of the significant positive socio-economic impact EUREKA projects have.

- Strategic 'Cluster' initiatives create a favourable environment in which to develop generic technologies to drive European standards and the interoperability of products in a wide range of sectors including ICT, the digital home, automotive industry and smart cards.
- For innovative projects (mainly involving SMEs) the estimated average increase in annual turnover is around €1 million per participant and four jobs are created within a year of project completion.
- The public funding invested is returned less than two years after project completion.
- There is strong evidence that the commercial position of many SMEs is strengthened as a result of their participation in a EUREKA project, in particular in terms of access to new markets in Europe and beyond.

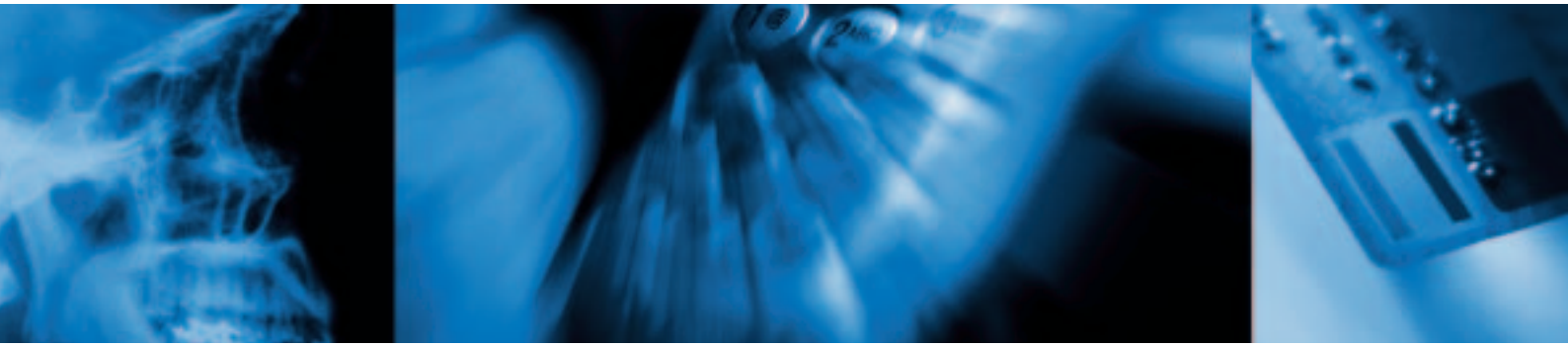
The new Dutch EUREKA Chairmanship (July 2004 to June 2005) will focus on two cornerstones, based on the joint Danish, French and Dutch (Troika) programme: quality assurance and funding of EUREKA projects; the positioning of EUREKA in the European Research and Innovation Area (ERIA).

In addition, specific objectives of the Dutch Chair are:

- To improve funding mechanisms for EUREKA projects;
- To reinforce collaboration with existing Clusters and to support and enhance the position of newly launched Clusters;
- To help strengthen the position of innovative SMEs in international technology development;
- To raise awareness of EUREKA amongst industry and policy-makers;
- To address sustainability, chosen as a Chairmanship theme.

As markets globalise, the European economy has never been more dependent on innovation for its survival. EUREKA, with its unique ability to react rapidly to market change, is central in supporting this innovation and building the 'European Competitiveness Area'.

Michel Vieillefosse
Head of the EUREKA Secretariat



THE INITIATIVE AT A GLANCE

The EUREKA Initiative is committed to enhancing the competitiveness of European industry through the promotion of high-quality collaborative, market-led innovation. This decentralised, intergovernmental European network brings together 33 member states and the European Union. National Project Coordinators in each member country facilitate the generation of cross-border projects involving major multinationals, SMEs, research institutes and universities.

Since its creation nearly 20 years ago, some 1600 projects have been completed and around 600 are ongoing. Involving an increasing number of SMEs, these projects contribute to improving wellbeing, security, the environment and employment in Europe and beyond.

The AMBIENCE robot is the 'human face' of the EUREKA Cluster ITEA project of the same name. An element of AMBIENCE is the development of sensors responsive to voice, gestures and eye movements, able to alter the environment in an interconnected home.

The EUREKA network

EUREKA functions through a network of National Offices. Through this flexible and decentralised network, the Initiative offers project partners rapid access to a wealth of knowledge, skills and expertise across Europe and facilitates access to public and private funding schemes. This, combined with its time-to-market reactivity, means EUREKA is considered the most appropriate tool for many companies and SMEs to fulfil their R&D objectives.

The EUREKA Secretariat in Brussels acts as a central support unit, managing the project database and undertaking communications, public relations, evaluation and network development activities.

A key role in the European Research Area

Industry-driven and market-oriented, EUREKA complements national and other European level programmes, and is therefore playing an important role in the development of the European Research Area.

Furthermore, by encouraging and helping businesses to innovate, the EUREKA Initiative is working actively towards the common European objective of raising investment in R&D to 3% of GDP by 2010.

Adding value

Projects bearing the EUREKA label enjoy an internationally recognised status, a significant advantage when marketing a product, process or technology and seeking finance from public and, increasingly, private investment sources. Funding is sought both for project development, but also the most difficult stage of all, transferring it to the marketplace.

Projects are widely promoted on the EUREKA database and through various national and European publications, international exhibitions and events.

Through their flexible frameworks for collaboration, EUREKA Clusters – longer-term, strategically significant projects aimed at developing generic technologies – play a key role in building European competitiveness, driving European standards and the interoperability of products in a wide range of sectors.

Offering support

Practical support is provided in several ways. EUREKA's partner search facilities and wide range of networking activities help projects find partners, and vice versa. Regular partnering events on specific technological issues provide excellent forums for promoting the benefits of collaborative research, establishing contacts and discussing ideas that could lead to R&D ventures. EUREKA can advise project participants on funding support schemes run by other member countries and facilitate contact with governments, so that participants can raise and influence issues relevant to their projects and sectors.

EUREKA'S CLUSTERS IN BRIEF

WHAT IS A EUREKA CLUSTER?

EUREKA 'Clusters' are longer-term, strategically significant industrial initiatives. They usually have a large number of participants, and aim to develop generic technologies of key importance for European competitiveness, primarily in ICT and, more recently, in energy and biotechnology.

Clusters bring together large companies – very often competitors – along with SMEs, research institutes and universities, sharing both the risk and benefits of innovation. They focus on developing and commercially exploiting new technologies. Their goal? *To ensure that Europe retains its leading position in a world market.*

EUREKA ICT Clusters deliver ingenious, useful and commercially relevant innovations – smart cards to support mobile and electronic commerce, navigation systems, computerised engine control and safety features found in many new automobiles, sensors responsive to voice, gestures and eye movements which are able to alter the environment of an interconnected home, and ultrasound devices which enable images to be viewed in 3D.

Initiated by industry in close collaboration with national funding authorities, each Cluster has a technological 'roadmap', defining the most important strategic domains. Specific goals are achieved through scores of individual projects. A key asset of EUREKA is its flexibility: roadmaps and projects are continuously adapted in response to the rapidly changing technological environment and market demands.

Clusters aim to exploit the technologies developed through existing national and European programmes and play an important role in defining European standards and interoperability.

Clusters and their market areas

		Value of ongoing projects (M€)
• Microelectronics	MEDEA+	2317
• Software intensive systems	ITEA	559
• Packaging and interconnection	PIDEA+	193
• Microsystems technology	EURIMUS II	146
• Sustainable energy	EUROGIA	36
• Telecommunications	CELTIC	31
• Recycling electronic components	SCARE	23
• Robotics	FACTORY DNA	16
• Forest Sustainability	EUROFOREST	8

published 30 June 2004

MEDEA+ (2001-2008)
Microelectronics Development for European Applications
www.medeaplus.org **Investment: €4 billion**

Advanced cooperative R&D in microelectronics to make Europe a leader in system innovation on silicon

ITEA (1998-2008)
Information Technology for European Advancement
www.itea-office.org **Investment: €3 billion**

Seeks to build a digital future by helping Europe become a leader in software embedded systems

EURIMUS II (2004-2008)
EUREKA Industrial Initiative for Microsystems Uses
www.eurimus.com **Investment: €0.5 billion**

The development of generic microsystems

PIDEA+ (2004-2009)
Packaging and Interconnection Development for European Applications
www.pidea.com.fr **Investment: €0.6 billion**

The electronics industry's development of innovative I&P (Interconnection and Packaging) technologies

CELTIC (2003-2008)
Cooperation for a sustained European Leadership in Telecommunications
www.celtic-initiative.org **Investment: €1 billion**

Telecommunications solutions through collaborative research

NEWMEDFASTER (2004-2005)
New Safe Medicines Faster (definition phase)
www.nsmf.org **Investment: €0.69 million**

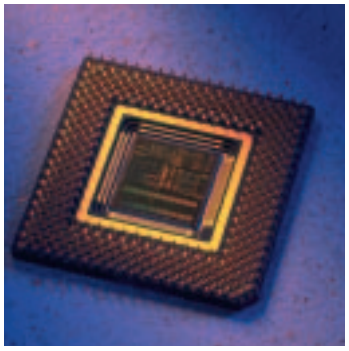
Optimisation of the medicine R&D process from idea generation through to research, applied research, preclinical, clinical, regulatory phases and beyond, including tools and diagnostics

INSYSBIO (2004-2009)
Integrative Systems Biology **Investment: €0.5 billion**

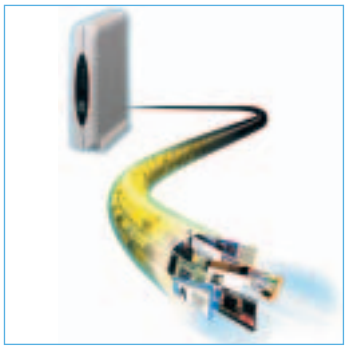
To promote industry-driven R&D projects in Systems Biology to reinforce the competitiveness of the European pharma and food industries

EUROGIA (2004-2008)
Sustainable Development and a Secure Energy Supply for a Cleaner and Safer Future
www.eurogia.com **Investment: €1 billion**

Development of technologies needed for a more efficient exploitation of resources, while ensuring a radical energy process of decarbonisation through capture and storage of CO_2, migration to natural gas and then to hydrogen



Today's semiconductor manufacturers are aiming to build whole systems on single chips smaller than the size of a thumbnail.



'Digital Head-end' makes cable-based systems fully broadband and interactive by squeezing multiple high-quality TV and data channels into a single stream.

MEDEA+

MEDEA+ is the latest industry-driven pan-European programme for advanced cooperative R&D in microelectronics. Following the two previous initiatives, JESSI (1989-1996) and MEDEA (1997-2000), it focuses on enabling technologies for the Information Society and aims to make Europe a leader in 'System Innovation on Silicon'. SMEs, universities and research institutes constitute two-thirds of MEDEA+ partners.

Soon complete products like mobile telephones, computers or camcorders – and not just components – will be based on a single silicon chip, reducing product cost, opening new markets and boosting business. A strong European position in this sector is therefore crucial for European competitiveness.

- **Thanks to JESSI and MEDEA, STMicroelectronics, Infineon Technologies and Philips Semiconductors are now ranked in the world top 10 chip manufacturers.**
- **With a budget of €2 billion, Phase 1 (2001-2004) involves 280 partners in 16 countries.**
- **52 labelled projects to-date.**
- **Participants enjoy continued competitiveness and strengthened European partnerships.**
- **The European position in worldwide standardisation is being consolidated and can be exploited through the licensing of European intellectual property.**

ITEA

Europe's leadership in the fast-moving sector of embedded software and software-intensive systems is crucial to securing future competitiveness in a wide range of industries.

From computers to consumer appliances, from smart cards to cars, from telecoms to health care, from business to home, information technology affects our daily lives. As systems become increasingly configurable, adaptable, intelligent, dependable, secure and complex, they will become more and more software intensive. Different types of digital data (image, video, voice, text) used in the home, the office, or on the move, will be handled by these systems.

ITEA was launched to strengthen European industries in this rapidly evolving field. As we become more mobile, our lives depend more on connected products containing embedded software. A crucial element of the digital future will be smart systems that interact invisibly and seamlessly with a safe, secure network, ensuring privacy whilst enriching many aspects of our lives. ITEA is helping to define common standards and solid technology platforms with which to turn this vision into reality.

- **Phase 1 (1998-2003): €1 billion budget.**
- **380 partners in 21 countries.**
- **64 labelled projects.**
- **ITEA is succeeding in its mission to close the gap in software-intensive systems and prepare standards suitable for global adoption.**

PIDEA+

The electronics industry in Europe is subject to intense competition from Asia and the US. To remain competitive, PIDEA+ is strengthening the links between various actors in the European electronics industry, developing innovative miniaturised systems by mastering high density I&P (Interconnection and Packaging) technologies that meet market needs.

The I&P of integrated circuits affects the performance, speed, power, reliability and cost of electronic products in numerous fields, including consumer electronics, smart cards, automotive, aerospace and railways, and security.

- **Predecessor PIDEA (1999-2003): €0.3 billion budget.**
- **168 partners in 13 countries.**
- **35 labelled projects.**
- **PIDEA+, a five-year programme, was launched in March 2004 with a budget of €0.6 billion.**

Enhancing packaging technologies for Professional Mobile Radio communication (PMR) will greatly improve public safety.

Using Active Silicon Protection to secure smart cards (for payments, mobile communications, health and ID) against hackers.

EURIMUS II

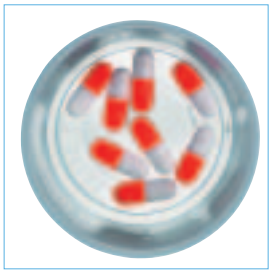
EURIMUS II is advancing the achievements of EURIMUS in the development of products and systems which exploit micro-, nano- and enabling technologies. It aims to accelerate the growth and increase the market share of European industries in innovative products and systems that use key components based on Micro-System Technologies (MST or MEMS).

By combining microelectronics, sensors, micro-actuators and signal processing in one package, microsystem technologies can make products smarter, smaller and better, as well as create entirely new applications.

Already an integral part of the automotive and multimedia sectors over the last decade, microsystems have now moved into biomedical applications and telecoms. Over the next five years, new mass market functionalities are anticipated – automotive (anti-collision systems and tyre pressure sensors), aeronautics, computers (printing and writing heads) and biomedical (smart pills and drug delivery).

EURIMUS II (2004-2008) is supported by 11 countries.

- **Improving driver safety through low cost infrared technology.**
- **Ultrasonic imaging to obtain multiple scanning planes for accurate 3D image generation.**
- **With a budget of €180 million, predecessor EURIMUS (1998-2003) involved 250 partners in 15 countries.**
- **Cluster developments include MEMS sensors, actuators and infrared camera for cars.**



New mass market functionalities are anticipated including smart pills and drug delivery.

Improving driver safety through low-cost infrared technology.

NEW CLUSTERS

CELTIC

Telecommunications play a key role in the economy and society. This sector is therefore of critical importance if Europe is to compete successfully in the global economy. CELTIC is an industry-driven programme which aims to strengthen European competitiveness in telecommunications.

CELTIC makes a major contribution to enabling broadband access and affordable mobile services for all European citizens. This includes enhanced, user-focused audio-visual and multimedia services, public safety, full e-governance, access to high quality healthcare, and ubiquitous presence – meaning services anywhere and anytime.

To achieve this, CELTIC is focusing on integrated communication system solutions for end-to-end telecommunications services. This approach is supported by the concept of a Pan-European laboratory, which enables the trial and evaluation of service concepts, technologies, system solutions and business models.

Specific challenges of CELTIC include the convergence of telephones, televisions and home computers, as well as the development of innovative business models and revenue-generating communication services that meet the needs of both corporate and private customers.

- **CELTIC (2003-2008): €1 billion budget.**
- **31 labelled projects by 1 July 2004.**
- **240 partners from 21 countries.**
- **Very high involvement of the telecoms industry (large companies as well as SMEs).**

NEWMEDFASTER

NEWMEDFASTER is a visionary initiative aimed at improving drug development and approval in Europe through cooperation between public and private institutions. The concept covers the optimisation of the medicines R&D process from idea generation through research, applied research, preclinical, clinical, regulatory and further including tools and diagnostics.

The aim of NEWMEDFASTER is to reduce by 50% the time it takes from candidate selection to approval. This calls for a profound revision of the current development and regulatory process; this revision is also necessary to reap the full potential of individualised medicine.

NEWMEDFASTER will pursue this as follows:

- **Technology:** To optimise and re-engineer current drug development utilising new scientific knowledge to eliminate bottlenecks and develop new tools and technologies for drug development and approval.
- **Knowledge management:** To improve knowledge flow in drug development and approval with better IT tools and faster learning.
- **Public-Private partnership:** To strengthen joint competence building by all stakeholders to ensure patients have faster access to new, innovative medicines.
- **Individualised medicine:** Development and approval of medicines that match the diversity within patient populations in terms of both safety and efficacy.

- **The one-year definition phase to provide a White Book was approved in April 2004.**
- **With a budget of €0.69 million, it involves 11 participants from 8 countries.**

INSYSBIO

The major challenge facing the drug and food industries is to reduce the failure rates within the R&D process whilst increasing R&D output and the number of novel drugs discovered. All of this, whilst keeping costs and development time at their lowest possible levels.

Integrative Systems Biology approaches, methods and tools used in parallel with high-throughput and in silico technologies, can solve real-world problems in drug and food research, development and production.

INSYSBIO proposes to promote industry-driven R&D projects in Systems Biology to reinforce the competitiveness of European pharmaceutical and biotech companies through three main activities: the integration and analysis of existing data in a homogeneous and accessible way; the development of integrative modelling tools to better model biological systems function, and the creation of integrative models for applications in both drug and food sectors.

- **INSYSBIO (2005-2010) is supported by France, the UK, the Netherlands, Denmark, Germany, Finland and Israel.**
- **€0.5 billion budget**
- **First call for projects: January 2005.**

EUROGIA

EUROGIA aims to initiate the technological developments that are fundamental to ensure a better management of fossil fuels, in order to facilitate a rapid migration towards the hydrogen economy.

This can be achieved through:

- **Reserves management optimisation during the characterisation and exploitation phases.** Currently known reserves are not sufficient to meet world population needs for the next few decades, when alternative energy sources may become sustainable and perennial.
- **Decarbonisation of the fossil energy chain.** An essential consequence for exploration is the migration towards a wider use of natural gas, allowing a substantial reduction in CO_2 (50%) during the conversion to secondary energy. The long-term objective is to migrate towards a hydrogen economy, however until hydrogen production technologies based on nuclear and renewable energy sources become marketable and socially acceptable, hydrogen has to be produced from fossil fuels.

- **EUROGIA (2004-2008) is supported by 4 countries and another 12 have expressed interest in participating.**
- **Investment: €1.0 billion.**

INNOVATIVE PROJECTS

> WELLBEING > SECURITY > ENVIRONMENT > EMPLOYMENT

We encounter the results of EUREKA innovative projects every day. From intelligent in-car navigation systems, recyclable plastic lampposts which reduce road deaths by crumbling on impact, to new film special effects techniques, in Harry Potter, Lara Croft and many more.

Projects featured here include: environmentally-friendly micro-generators powered by kinetic energy, an industrial effluent cleansing technology and a new X-ray system with exceptional image quality and less exposure of patients to radiation.

EUREKA projects result in a ready-to-market product, process or service, representing a significant advance in its particular sector. Given their closeness to the target market, the potential added value of these projects and their return on investment is high.

A minimum of interference. A maximum of support.

The EUREKA Initiative's flexible, bottom-up structure means participants build projects themselves, to meet the specific objectives and capabilities of the project consortium. Thanks to EUREKA, SMEs can be involved in projects much larger than they would otherwise be able. Costs and risk diminish. And the time it takes to bring the result to the market is accelerated. Through such international collaboration, participants can also access new markets and expertise.

These are key factors helping European industry to maintain a competitive edge and technological advantage.

A green way to power wristwatches – and expand an SME

As concerns grow about the environmental impact of the highly toxic materials in batteries, wristwatch manufacturers need to find clean alterative energy sources. Partners from the **Netherlands, Switzerland** and **Germany** overcame the formidable technical challenges of mass-producing micro-generators powered by kinetic energy, harnessed from the wearer's wrist movements.

Heart pacemakers, hearing aids, hydro-generators – harnessing energy to ignite a gas water heater through energy released as water falls from the tap – and animal tracking systems are also all likely to benefit from this new technology.

SMEs grow with EUREKA

Dutch SME **Kinetron BV** expanded from a staff of one to 30 as a direct result of this project. Its capacity to manufacture micro-generators has increased to 1.5 million per year, and some 300,000 micro hydro-generators are produced annually.

- **E! 1542 AUTO QUARTZ WATCH**
- **Project duration: 1996-1998**
- **Investment: €4.2 million**

Making money from waste

Waste generated by foundries is often greater in volume than the steel and iron produced. Potentially valuable materials are thrown away – and some foundries risk closure due to non-compliance with new environmental legislation.

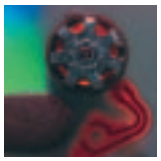
Partners from five European countries developed technologies to separate material at source, reduce raw material consumption and improve recycling, **exploiting, rather than disposing of foundry by-products and waste metals.**

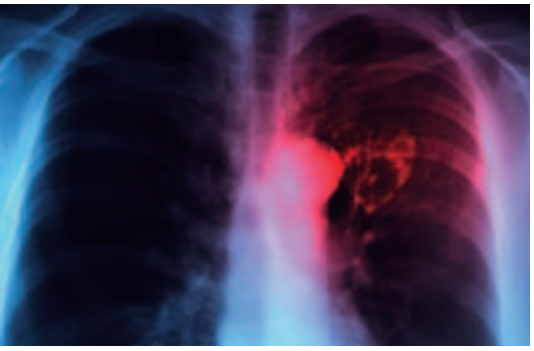
As a result French SME Valdi reduced its annual waste from 40,000 tons to just 10,000 tons in five years – and efficiency has increased by 20% in terms of both productivity and cost.

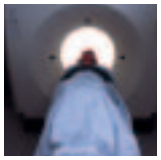
EUREKA helps preserve natural resources

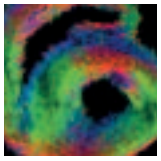
Today **Valdi** has become a leader in some types of recycling such as alkaline and saline batteries and waste with a high metal content. It expects to double its turnover over the next five years as a direct result of the project. A former copper refinery has been converted to extract metals from waste, helping to preserve depleting natural stocks.

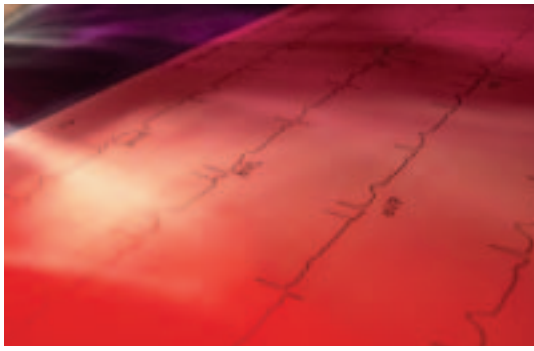
- **E! 902 CLEF**
- **Participating countries: France, Belgium, Germany, Spain, United Kingdom**
- **Project duration: 1993-1997**
- **Investment: €14.2 million**











Improving diagnosis and reducing radiation through advanced radiology

Radiology in medical imaging is an essential diagnostic tool for numerous medical exams, from cardiological and gastro-intestinal to neurological. **Franco-Italian** project participants optimised the combination of a medical high resolution camera with a high performance X-ray image intensifier and a dedicated image processing unit. The result: **a radiological imaging sub-system with exceptional image quality**. Diagnosis and treatment have improved, and the amount of radiation to which the patient is exposed has been significantly reduced.

A EUREKA label is a hallmark of excellence

"Our image and visibility have greatly improved since we worked on this EUREKA project," says Mattia Gerina, General Manager of Italian partner ATS. *"In addition to the 100 intensifying units we sell each year, the company's annual turnover is continuing to rise."*

French partner, **Thales Electron Devices**, successfully achieved its diversification strategy, becoming world leader in radiological imaging and high resolution cameras.

- **E! 1521 HIRIS**
- **Project Duration: 1996-1998**
- **Investment: €1.4 million**

Using MRI to fight one of Europe's biggest killers

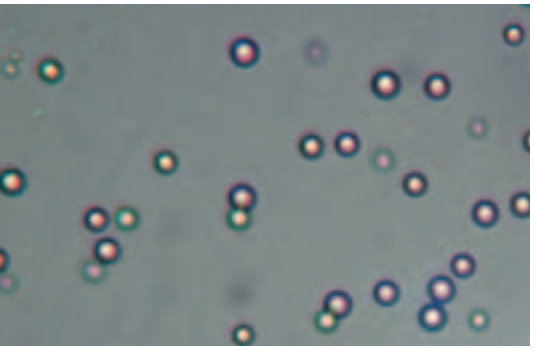
According to World Health Organisation figures, an estimated 17 million people die each year of heart disease – that's more than the entire population of Denmark, Norway and Switzerland combined. Many of these cases could be prevented. Current diagnosis techniques are expensive, invasive and subjective in their interpretation. Furthermore, the patient must undergo numerous examinations for a full assessment, some of which may expose him to radiation.

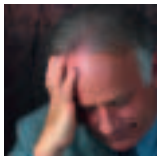
By developing MRI (magnetic resonance imaging) procedures for the diagnosis of heart disease, this project has made significant progress in developing a '**one stop shop' for cardiac examinations**. Procedures developed in this project are already on the market, improving diagnosis and resulting in better-adapted and more successful treatment.

EUREKA improves wellbeing

A variety of products of this project are being marketed worldwide, including a method for parallel imaging (SENSE) and a software package for coronary artery imaging. With this package the maximum number of patients that can be examined per day has increased from eight to 15. Because of the success of the project, a follow-up has been awarded funding and another EUREKA proposal is expected shortly.

- **E! 2061 INCA-MRI**
- **Participating countries: Switzerland, the Netherlands, Denmark, Germany, Austria**
- **Project duration: 1999-2003**
- **Investment: €2.1 million**





Locking in toxins... and reducing the incidence of Alzheimer's

A company's ability to process chemicals is restricted by the risk to workers of inhaling toxic dust. A novel technology developed by a **Spanish** and **Austrian** consortium encapsulates harmful ingredients, protecting workers in the manufacture of herbicides, fungicides and essences.

The technology is also used to encapsulate antioxidant food additives. This prevents them from being released until they are in the stomach and hence slows down cellular ageing. The incidence of diseases such as arteriosclerosis, Alzheimer's and dementia is therefore reduced.

EUREKA is helping Europe succeed

Worldwide sales of the chemical processing technology increased partners' annual turnover by €3.5 million. A further €4 million increase in turnover is expected in 2004 through the marketing of food additive encapsulation; this is expected to rise in annual increments of 30-50% from 2005 onwards.

- **E! 1972 EUROAGRI MEMP**
- **Project duration: 1998-2004**
- **Investment: €1.5 million**

Cleaning industrial wastewater the biodegradable way

Cleaning wastewater effectively is becoming increasingly important as concerns grow about industry's impact on our environment. **Biotreatment** is one of the most promising cleansing techniques – it is highly efficient and there is no secondary waste.

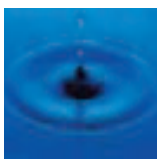
Microbes used to degrade organic pollutants in wastewater are attached to a solid matrix. By adapting the composition of the matrix – the so-called 'cell attachment effect' – project partners from the **Czech Republic, Germany** and **Hungary** found they could tailor the treatment to specific pollutants, water toxicity and pollutant toxicity.

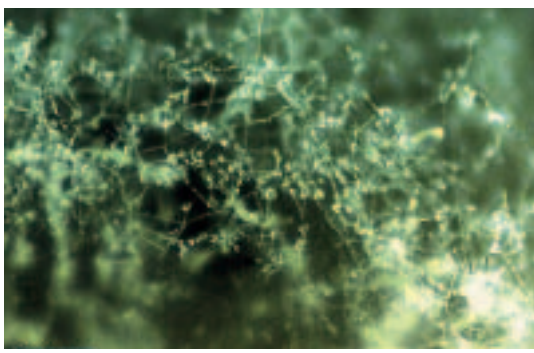
This technology enables industry to improve and stabilise the quality of effluent, ensuring legislation is met, avoiding fines and, most importantly, improving the quality of the water discharged to rivers.

EUREKA helps improve the environment

Czech SME Aquatest has witnessed a significant increase in turnover as a result of this project. Tailored solutions have already been sold to numerous industries. The technology has enabled a Czech cyanide producer to continue and increase production by some 200 tons, a €0.5 million increase in annual turnover. The technique has also been applied to remediate contaminated land in the Czech Republic; further projects are underway in Hungary and the Slovak Republic.

- **E! 1438 POLLUTDEGRADCELL**
- **Project duration: 1995-2000**
- **Investment: €1.8 million**



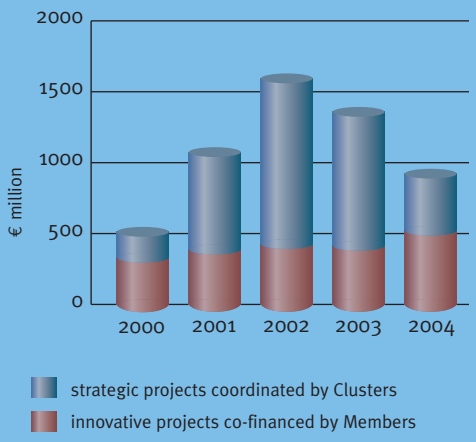


EUREKA IN FIGURES

Innovation is key to European competitiveness and is helping alleviate the recent economic downturn affecting many European countries. EUREKA plays an important role in initiating this innovation process, both through its innovative individual projects and its longer-term strategic Clusters. The charts on these pages help illustrate the role EUREKA plays in European innovation.

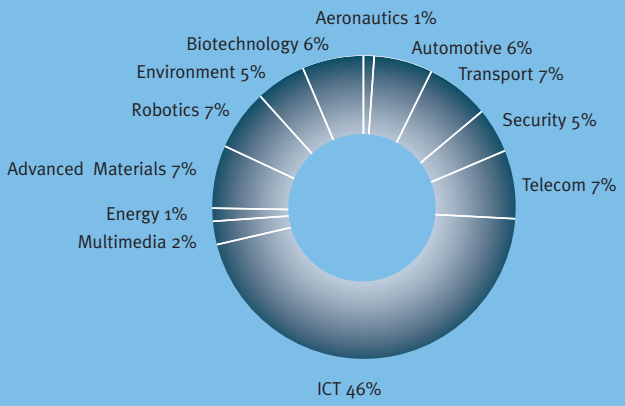
Funding for EUREKA projects

Investment in innovative projects has remained relatively stable in recent years, in contrast to Clusters which is more variable.



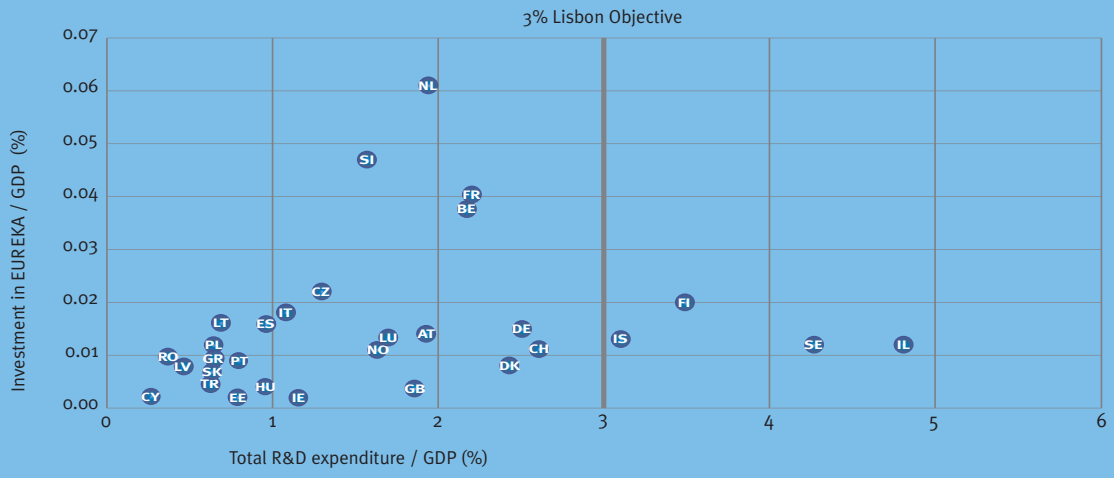
Target markets (by investment)

EUREKA projects touch many aspects of our everyday lives.



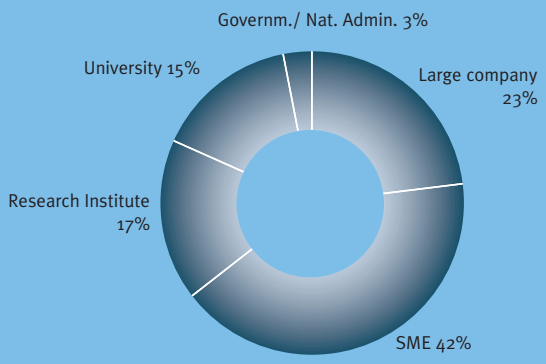
Investment by country in EUREKA versus total R&D expenditure

EUREKA's role in reaching the Lisbon Objective of raising investment in R&D to 3% of GDP by 2010.



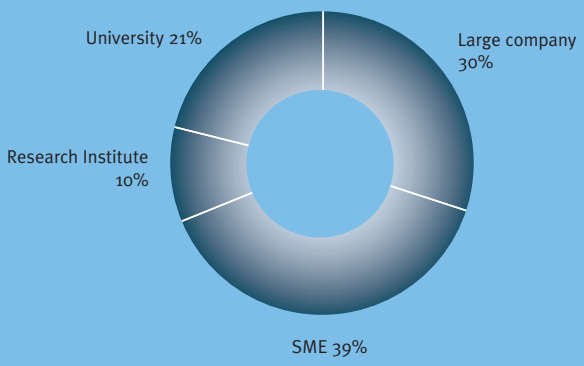
Project participant – Innovative projects

Innovative projects are mainly led by SMEs, enabling them to fulfil their research objectives

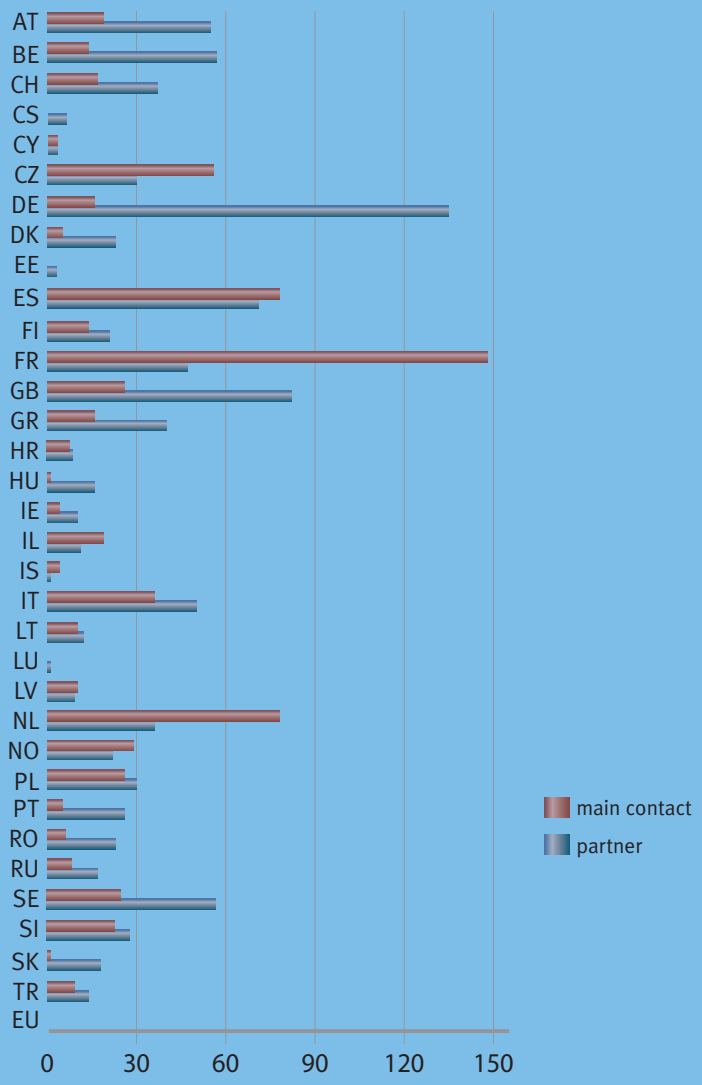


Project participant – Clusters

Clusters are strategic initiatives bringing together Europe's leading companies and SMEs.



Number of ongoing individual projects by member in 2004



THE FRENCH CHAIR YEAR IN BRIEF

2003

September

- Members of the EUREKA Network and associates from member countries meet in Brussels to welcome Michel Vieillefosse, Head of the EUREKA Secretariat.

- The Initiative takes the opportunity to increase its visibility to the venture capital community at the European Investment Forum's 10th anniversary conference in Milan.

October

- Also in Milan, EUREKA is represented in force at Information Society Technologies 2003 by speakers led by HLG Chairman Jean-Paul Jacamon and Clusters MEDEA+, ITEA, EURIMUS and PIDEA. EUREKA contributes to several workshops and exploits this ideal opportunity to promote the Initiative's strategic influence in the IST sector.

Jean-Paul Jacamon speaks at IST 2003.

- Europe's ITC policy-makers and software experts gather in Leuven, Belgium, for the ITEA Fourth Annual Symposium. The two-day event marks the halfway point of the EUREKA Cluster's eight-year programme. A highlight of the event is the presentation of the 2003 ITEA Achievement Award by Prince Philippe of Belgium to project AMBIENCE. This remarkable new concept aims to improve quality of life by providing ambient intelligent environments, sensitive and responsive to a human's gestures and emotions.

Winners of the 2003 ITEA Achievement Award.

2004

January

- Project Assessment Methodology (PAM), a harmonised Network-level ex-ante evaluation tool, is made compulsory for all projects endorsed from the beginning of the year. PAM, an initiative of the Hellenic EUREKA Chairmanship (2001-2002) and adopted in Copenhagen in June 2003, consolidates the common understanding of the quality of EUREKA projects, providing an additional tool for the Initiative's national offices to carry out an initial assessment of projects. By further enhancing the quality of EUREKA projects and the value of the EUREKA label, the application of PAM is a first step to attract significantly more investment capital from the private sector.

- The EUREKA Secretariat publishes the 2002/2003 Impact Assessment Report on its website. This report illustrates the technological and commercial impact of EUREKA projects. Particular emphasis is given to recent measures taken to increase the likelihood of a positive project outcome (see Project Assessment Methodology, above).

- The EUREKA Treasures modular travelling exhibition continues its successful European tour, with visits scheduled throughout 2004 to Galway in Ireland, Dresden in Germany, Amsterdam and Sophia Antipolis in France.

February

- A mid-term assessment of ITEA and MEDEA+, the two largest EUREKA Clusters, is published. This exercise, requested by the public authorities which financially support the Clusters, shows that both demonstrate a real coherence between their objectives and the observed results.

- The EUREKA Secretariat publishes comprehensive guidelines for SMEs looking to begin a EUREKA project or join an existing venture. SMES in International Cooperation – Key Factors for Success leads the reader through the entire process, from developing a project idea, working with the national EUREKA office, securing financing, project endorsement and awarding of the EUREKA label.

March

- The bi-annual European Business Summit in Brussels seeks to identify and propose specific initiatives to boost Europe's competitiveness and breathe new life into the Lisbon Agenda. The focus of the third edition of this gathering of Europe's corporate elite is 'Research and innovation: A European strategy for more growth and jobs'. EUREKA, one of four Summit partners, is represented by Paul Mehring, Chairman of the EUREKA Cluster ITEA, who speaks at the thematic session 'The ICT challenge: Getting connected to an e-Europe'.

EUREKA-representatives speak with EU Research Commissioner Philippe Busquin.

April

- The incoming Dutch EUREKA Chairmanship team announce the appointment, as Chair of the High Level Group, of Roel Kramer, former Executive Vice President of Philips Consumer Electronics and a co-founder of Clusters JESSI and ITEA. Pol Van den Bergen, who has been involved with the Initiative since its beginning in 1985, will be NPC Chairman.

Roel Kramer, new Chair of High Level Group.

June

- Ministers and representatives from the Initiative's 34 members meet at the Ministère des Finances in Bercy, Paris for the XXIst Session of the EUREKA Ministerial Conference. Co-chaired by François d'Aubert, French minister for research and Patrick Devedjian, French minister for industry, the meeting takes stock of the achievements of the French EUREKA Chairmanship year and welcomes the new Dutch Chairmanship. Impressed by the dynamism of EUREKA over the past year, ministers recognise its continued role in strengthening European technological potential and the competitiveness of European industry, as such making a significant socio-economic impact.

- Also announced at the Ministerial Conference is that the Initiative is soon to grow to 36 members, with the Republic of San Marino and the Principality of Monaco becoming full members from 1 January 2005. Both countries already have projects underway and now plan to boost their collaboration at European level, in particular in the pharmaceutical, environmental, plastic processing and electronics sectors.

The Ministry of Finance, Paris.

- Italy announces that it will take over Chairmanship of EUREKA in July 2006. The Czech Republic will succeed the current Dutch holders in July 2005.

- BUSANET, a European network of business angels, and EUREKA sign a partnership agreement aimed at developing funding activities and financial toolboxes to support innovation implementation in Europe. The first step of this new collaboration is to create an electronic market exchange and reach a target of 12 agreements between business angels and SMEs by June 2006.

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