

Welcome to the ESTO Newsletter

The ESTO Newsletter presents itself in a new format and consists now of four sections:

- **ESTO Telegram:** Information about just finished studies, articles, issues from operational level, etc.
- **ESTO Success Stories:** Brief information about relevant impact achieved by ESTO activities.
- **Portrait of ESTO Members:** Short information on the interests of new ESTO Members (Full, Associated or Affiliated), their projects, activities, etc.
- **ESTO Platform:** Opportunity for ESTO members to announce/disseminate information such as: publication of reports beyond ESTO work, interesting web pages, events such as EU or National policy news, conferences and workshop announcements/short reports, etc. relevant to JRC-IPTS and ESTO members.

E-copy of this newsletter can be found at <http://esto.jrc.es>.

THIS EDITION DEALS WITH:

ESTO TELEGRAM

ESTO studies on the following subjects have been completed recently:

- [Human tissue-engineered products: today's market and future prospects](#)
- [Evaluation of the utility and impact of S&T Research Mapping: Support Action to the Directorate DG Research B "Open Co-ordination of Research Policies"](#)
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ESTO TELEGRAM

Human tissue-engineered products: today's market and future prospects

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With the advancement of tissue engineering a novel concept of medical treatment can be envisaged. Tissue-engineered products present a new category of therapeutic products,

which currently are not covered appropriately by existing European legislation. Against the background of the development of a new European legislative framework for human cells and tissues and tissue-engineered products, DG Enterprise requested a study from the Joint Research Centre on commercial and research activities in the field of tissue engineering. The study covers the following objectives for the EU and acceding countries:

- To provide information on the state of the art and future directions of tissue engineering research
- To provide an overview and analysis of tissue engineering products and companies
- To identify and analyse factors possibly influencing tissue engineering development.

Tissue engineering in this study is defined as the regeneration of biological tissue through the use of cells, with the aid of supporting structures and/or biomolecules (European Commission, 2001). This definition limits the scope to products that combine cells with (degradable) matrices or scaffolds plus, if necessary, biomolecules such as growth factors.

Evaluation of the utility and impact of S&T Research Mapping: Support Action to the Directorate DG Research B "Open Co-ordination of Research Policies"

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The report provides a 'utility and impact evaluation' of a pilot Mapping of Research Excellence developed for DG Research-B, the Directorate with responsibility for Open Co-ordination of Research Policies. The pilot is provided in the form of a prototype database of publications and patents performance for two scientific disciplines (nanotechnology and biotechnology). The database can be accessed on-line and users can select criteria to filter searches that give rankings of research performance in tabular form and as plots on a country map.

This evaluation examines the existing and potential usefulness of research mapping exercises amongst user communities. The user community here refers to actors such as research programme managers in funding agencies, officials in science ministries, industrial research directors, university administrators and researchers themselves. The project was implemented through a semi-structured telephone survey with 83 such users from 18 different countries. Interviewees were given a demonstration of results and normally had examined the mapping interface itself.

Overall evaluation: A mapping of excellence must be both relevant to the needs of a diverse group of stakeholders and reliable in terms of the results it can yield at reasonable cost. There is a fragmented demand from users, with varied requirements for the precision of the themes and for the granularity at which they need information on research entities. There is also variation in what users consider to be the criteria for excellence and concerns expressed about the accuracy of the data. In view of these concerns, our main conclusion is that extension of the present approach will not be cost effective in meeting the highly segmented user needs and in reaching sufficient reliability to support those needs. However, users were far more positive about the general role

The European Science and Technology Observatory (ESTO) is a network of organisations operating under the European Commission's - Joint Research Centre's (JRC's) Institute for Prospective Technological Studies (IPTs) - leadership and funding.

ESTO is presently composed of more than forty-five European institutions, all with experience in the field of scientific and technological foresight, forecasting or assessment at the national level. In line with the objective of supporting the JRC-IPTS work, ESTO aims at detecting - at an early stage - scientific or technological breakthroughs, trends

and events of potential socio-economic importance, which may require action at a European decision-making level. The ESTO core-competence therefore resides in prospective analysis and advice on S&T changes relevant to EU society, economy and policy.

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of using bibliometric indicators in building the European Research Area. There was already access to such data in many Member States, but the comparative element is missing. In addition some countries, notably the candidate countries, had expertise in the use of indicators but did not necessarily have good access to data and so they were supportive of the idea that such information could be made accessible via a common European platform.

Conclusions: As noted above the main conclusion is that a cost-effective outcome is not likely if the present approach is extrapolated. However, the strong support for the principle of using bibliometric indicators at European level suggests two ways forward:

- Produce low precision, low cost indicators which are defined in geographical rather than institutional terms; and
- Build a co-operative European platform for S&T indicators to facilitate national access to relevant databases, develop the capabilities of the indicators community and co-ordinate definitions of the criteria of relevance and reliability through collective exercises of interpretation of results and comparative analysis.

The final report is available under http://esto.jrc.es/detailshort.cfm?ID_report=1112

Aml@Life - Roadmapping Ambient Intelligence in Everyday Life

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Addressing the problem of universal and trusted access to Information Society Technologies (ISTs) is today discussed and researched in many different ways, but a key challenge consists of framing the problem in a prospective way. Universal access to ISTs, encompassing technical, social and economical dimensions, as well as securing its use should be proactively taken into account in research, development and the design of new technologies, in contrast with reactively trying to influence their diffusion in society.

The key question then consists of designing new technologies that have the potential to include everyone, that are affordable and build trust and confidence. This could help public policies in preventing new technologies from becoming a (new) source of exclusion in society.

This project focuses on Ambient Intelligence (Aml) Technologies since the vision of Aml assumes seamless, unobtrusive, and often invisible but also controllable interactions between humans and technology.

The project's focus is further delimited to the context of the everyday life of European citizens, to make a clear distinction with Aml in the professional sphere. Aml in everyday life (Aml@Life) requires specific attention because there is no simple spill over of technologies from the office to the home or vice versa. Also there is the already mentioned policy concern of exclusion or uneven distribution of private access.

There is no inherent guarantee that Aml@Life will be inclusive for everyone. Of course it should not only be designed for the urban, highly educated and mobile techno-freaks, but also for low-tech, ubiquitous use in the lives of most people to improve their everyday life. It should also be trustworthy, thus requiring the same degree of sophistication (with regard to privacy and security) as Aml in the professional sphere.

Aml should be designed in such a flexible and diverse way that it a variety of users will feel at home with it. Also it should support a diversity of uses and context of uses (leisure, education, work, family life, social life). People seamlessly migrate from being receivers, users, producers, consumers and citizens of media, information and communication in their everyday lives. Aml design should reflect this.

The key question is: how can intelligent and dynamically changing systems be made accessible, trustworthy and useful

within the context of the regularities and irregularities of our everyday lives?

The final report is available under <http://esto.jrc.es/docs/AmlReportFinal.pdf>

For more information on Roadmapping refer to <http://esto.jrc.es/docs/roadmapping.html>

Healthcare Technologies Roadmapping: The Effective Delivery of Healthcare in the Context of an Ageing Society

In order to reduce the current gaps between actual treatment provision and optimal treatment, the need for high quality healthcare technologies has been recognised to a greater extent. There is little doubt that healthcare systems management in many EU countries can be improved in order to improve sub-optimal medical treatment of the European population. Due to the ageing of the population, and the enlargement of the EU, the European population is anticipating that more financial resources will have to be invested into the future healthcare system. In order to improve the situation of million of patients without exploding expenditures in the healthcare systems, the provision logistics for healthcare technologies must be discussed in public; healthcare cost-benefit analyses shall be conducted with a longer-term perspective: (including expenditure and added value), adequate co-payment policies must be implemented.

The technology roadmap analyses the options deriving from the current and emerging state of healthcare technologies, if the present policy trends continue. It examines the impact of a range of societal and economic challenges and describes how the "desired future" could be reached in the context of an enlarged and ageing EU.

As demonstrated in two technology matrices, modern healthcare technologies have the potential to extend the life expectancy of patients, to increase their quality of life, to open up new tools for health prevention, monitoring, diagnosis, treatment and aftercare in an ageing and enlarging Europe.

The dominant technologies revolve around three technology clusters: Genetic Technologies (GENTEC), Medical Technologies (MEDTEC) and Information & Communication Technologies (ICTEC), listed in the healthcare technology matrix. Particular applications identified include the following:

- Pharmacogenomics,
- Gene therapy,
- Genetic diagnosis
- Stem cells
- Telemedicine and telecare
- Minimal invasive surgery

Promising developments over the next few years are expected to include the following:

- Vaccines against infectious diseases
- The ability to predict, delay, prevent and even cure cancer, heart disease, and certain neurological diseases.
- Genetic engineering (e.g. the human genome project)
- Continuing developments in biomaterials for prostheses and advances in robotics.

The Gene technology Cluster has demonstrated that the process of patient medical diagnosis and treatment will involve an assessment of the patient's genetics. Appropriate drugs will then be prescribed on the basis of their suitability to a patient's genetic make-up. This is the field of pharmacogenomics, which is likely to be a major healthcare benefit of genetic technology.

For more information on Roadmapping refer to <http://esto.jrc.es/docs/roadmapping.html>

The final report is available under <http://esto.jrc.es/docs/HealthcareTechnologiesRoadmapping.pdf>

ESTO SUCCESS STORIES

Euroabstracts referred to the ESTO report

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Euroabstracts introduced in its section *Production & Transport* a report which was originally elaborated by ITAS and recently up-dated and published as ESTO/JRC-IPTS report titled: "Fuel Cells. Impact and consequences of fuel cells technology on sustainable development".

For more information refer to

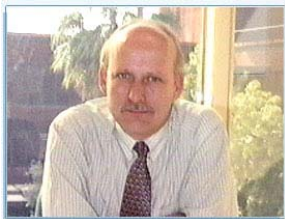
<http://www.cordis.lu/euroabstracts/en/august03/trans02.htm>

The Report can be downloaded under:

<http://www.jrc.es/cfapp/reports/details.cfm?ID=1092>

PORTRAIT OF NEW ESTO MEMBERS

New ESTO Manager: Gustavo Fahrenkrog [\(back to index\)](#)



Since July 2003, Gustavo Fahrenkrog is Adviser to the Director of the JRC-IPTS and responsible for Research Networks. In the frame of this new function, he took over the position as ESTO Manager.

Formerly, Gustavo was head of the "Technology, Employment and Competitiveness" unit of the JRC-IPTS.

For more information about his professional experience and completed projects, refer to <http://www.jrc.es/~fahrenkr>

New Associated ESTO Members

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According to an agreed procedure (for more information refer to the chapter *Process for Membership Admission and Withdrawal* in the "Information on ESTO and its Membership" (<http://esto.jrc.es/docs/AnnexDInfoMembership.doc>), the ESTO Executive Committee accepted the application of the following organisations to be up-graded from affiliated membership to associated membership.

ICTAF (Israel)

Founded in 1971, ICTAF is a leading institute in Technology Forecasting, Foresight, Assessment and Long-Term Planning, and is very active in the international community.

The multidisciplinary center taps the expertise of world-class scientists at Tel Aviv University and other well-known research establishments to create a core body of researchers with unrivaled knowledge in a diverse range of fields in exact sciences and engineering, geography, economics, education and social sciences, information technology and communications.

ICTAF functions as a think-tank, working alongside its governmental or business clients to produce far-reaching conclusions that are drawn from a unique blend of academic research and market know-how. ICTAF's Mission:

- To help policy-makers reach informed decisions based on technology's role in the development of economy and society.
- To serve as a think-tank for future policy planning in Israel and abroad.
- To harness the knowledge of Tel Aviv University's scientists and scholars for the benefit of the economy and society.
- To contribute to the efforts by Tel Aviv University to positively influence Israel's development.

- To enhance its leadership in the field of multidisciplinary foresight - covering science, technology, economics and society.

For more information please refer to <http://www.ictaf.org.il>

Futuribles (France)

Futuribles International, an independent, private non-profit organisation, was formally launched in 1967 – it grew out of the Comité International Futuribles created in 1960 by Bertrand de Jouvenel and the Centre d'études prospectives created in 1957 by Gaston Berger. Its overall aim is to contribute to a better understanding of the contemporary world and, using an approach that is strongly interdisciplinary and forward-looking, to explore the possible futures (in French: "futurs possibles"), the issues involved, and the policies and strategies that might be adopted. It endeavours to bring together everyone – both producers and users of futures studies – who would like to contribute to these aims and to the progress of the discipline.

Futuribles International consists of:

- Resource centre: "the look-out system"
- Meeting place: the "foresight forum"
- Learning centre
- Study centre: special forward-looking working groups

In addition, Futuribles is the main journal of futures studies in French. It offers an analysis of what might happen, and what might be with regard to the great challenges of the future.

For more information please refer to <http://www.futuribles.fr>

PBF (Poland)

The Progress and Business Foundation grew out of a recognition on the part of the industry and academia of the new needs and circumstances of the free economy after the fall of the Soviet system in Poland. Founded in 1991, it has been registered in the same year in the Central Foundation Register No. 1536 at the Register Court in Warsaw. "Progress and Business" Foundation is a registered EU consulting organisation No. POL 19104. Its supervising body is the Polish State Committee for Scientific Research, a ministry-equivalent governmental institution.

Resources at the Foundation's disposal:

- Extensive working relationships in specific industries, notably the energy, refining, petrochemical, chemical, electronics, packaging, furniture, clothing industries.
- Working relationships with government agencies at national, Voivodeship, and local government levels.
- Recognised position in the international network of development agencies and other organisations including the European Commission (Energy Directorate), UNIDO, Helsinki Economical University (Finland), ESSOR (France); Segal, Quince, Wicksteed Ltd.. (Cambridge, England), Danish Technological Institute, AED (USA), KANTOR (Greece) and others.
- Working relationships with various departments of Kraków universities (Jagiellonian University, Academy of Mining and Metallurgy, the Academy of Agriculture, and the Cracow Academy of Economics) including involvement of key professionals in Foundation's projects on contract basis.
- Core professional staff with project management expertise and analytical skills relevant to economic restructuring in key industrial sectors.
- High-level computer system including local area network, a LINUX based network, extensive Internet access, supported by qualified computer experts, as well as a range of specialised software

For more information please refer to <http://www.pbf.pl>

New Affiliated ESTO Member: SARC

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Since September, the Centre for Advancement, Science and Technology (SARC), Slovakia, is Affiliated ESTO Member.

SARC is a budgetary organisation established by the Ministry of Education in 1992 and headed by Dr. Martin Kreda (Director). SARC fulfils tasks and provides consultancy and services in international science and technology co-operation, in the field of advancement and application of science, research and technology transfer. It has regularly 10 employees co-ordinating and supporting Slovak participation in the EU FP and includes the Secretariat of National co-ordinators of COST and EUREKA. SARC is the main contact to FWP in EURATOM and JRC activities.

SARC is involved since 1999 in monitoring and identifying centres of excellence/competence and provided consultancy in both calls for support of Centres of Excellence. Running STRATA project RECORD aims to perform mapping of excellence in innovation in several CC. A suitable benchmarking methodology has been developed and tested for about 20 institutions including fields of microelectronics and informatics.

SARC developed and operates an information system for support of technology transfer and international science and technology co-operation SYPOVET with the following main tasks:

- Offer/demand based database for research/industry information exchange to support technology transfer
- The search of partners for the common RTD projects of the European Communities.

Since June 2001 SARC is co-ordinating a newly established network SIKAS (Slovak Information and Consulting Academic Network) for supporting Slovak participation in European R&D projects. The created network consists of 18 consultants financially supported by the Ministry of Education and employed at Rectorates of 18 universities. They are located in 11 cities all around the Slovak Republic, in some cases being a part of an Regional office for European programmes (RD, S&T, education, industry liaison). Since autumn 2002 SIKAS involves representatives from the Slovak Academy of Sciences and collaborating experts from both academic and industrial organisations.

Contact person for ESTO is

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For more information refer to <http://www.sarc.sk>

New Affiliated ESTO Member: LUS

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Since September, the Latvian Union of Scientists (LUS), Latvia, represented by the Forward Studies Unit (FSU) is Affiliated ESTO Member.

LUS, a non-profit and independent body of Latvian Scientists was founded in 1988 to apply organisational, research and development activities to technological and societal challenges and work for progress and sustainability at institutional, national and transnational levels.

LUS has about 400 members who are involved in science, research and education. About 180 members work in the fields of physics and engineering, 160 in life sciences and 60 in humanities and social sciences.

Since 2000 Dr. hab. Janis Strauchmanis is the elected Chairman of LUS.

LUS is active or is going to be involved the following fields relevant to ESTO activities:

- Skills development and life-long learning in RTD sector and high-tech industry
- Future studies / foresight in higher education

- Latvia in an enlarged Europe towards a sustainable development
- Techno-economic knowledge and innovation interface for SME's in Latvia
- Screening (inventory) of human and material resources in RTD sector and needs of the knowledge-based economy in the EU
- Social foresight

The Forward Studies Unit (FSU) constitutes a body within the LUS framework for researchers and practitioners involved in future studies and foresight. A systematic approach to the main fields of enquiry leads to set functional targets:

- Creation of learning space
- Co-ordination of research and other activities
- Networking
- Information production
- Dissemination

FSU researchers come from backgrounds in a wide range of disciplines experienced in European policy related projects. Staff synergy stems from the members' knowledge of the governmental structures, of private and academic fields.

Work programme:

- An interdisciplinary research project (funded by the Latvian Council of Science) *Latvia towards the Knowledge Societies of Europe: new options for entrepreneurship and employment achieving the goals of the Lisbon strategy*. (2004)
- Research on *Latvia in Europe: Future projections*, a project by the Baltic Centre for Strategic Studies, the Academy of Sciences of Latvia. (2003)
- FSU research project on Latvia's society (system aspects, current issues, trends, challenges, interrelations, options) within comparative studies of post-communist capitalism in Europe. (2003 –2005)
- FSU project *KS Information Series II: The Studies of Knowledge-based Economy* (e-learning and e-research) (2003 – 2005)
- FSU collaboration project with a newspaper 'Telegraf' (in Russian language, Riga) for the publishing of articles on foresight development in Latvia and the EU (2003)
- Editing and publishing of 'Zinātnes Vēstnesis' (Science Bulletin). A newspaper of the LUS, in collaboration with the Latvian Council of Science and the Academy of Science of Latvia. (2003) <http://www.lza.lv/zv00.htm>

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For more information refer to <http://www.lvzs.lv>

ESTO PLATFORM

Re-launch of ESTO Web Site

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The ESTO network web page has recently been re-launched. It provides information about the activities of ESTO such as Specific Studies, Monitoring Prospective S&T Activities, Articles and the IPTS Report. It further contains details on ESTO Membership, such as the Address list of ESTO Full, Associated and Affiliated Members, Information on ESTO and its membership - including application forms as well as a Guide on how to participate in the ESTO network and its activities. In addition, reports of ESTO studies and statistics of the network can be downloaded.

For more information about ESTO please refer to <http://esto.jrc.es>.