

STOA-NEWS

New Projects for 2007 / 2008

Work on the first set of projects carried out on behalf of STOA by the European Technology Assessment Group is almost completed and new projects have been set up or will be set up in the course of 2007. The new work plan for 2007/2008 so far comprises projects on the following subjects:

- Global Human Health,
- Assessment of the Safety of Tunnels,
- The Future of European Transport,
- Future Energy Systems in Europe,
- State of Recent Research on Legionnaires' disease,
- Interaction between New Technologies and the Job Market.

For abstracts visit <http://www.itas.fzk.de/etag>.

Among the set of new projects some are continuing work on subjects that have been touched on by scoping projects in 2006 as is the case with the new project on "Global Human Health" that takes up issues identified at a workshop on the subject held in the European Parliament in June 2006. The projects "The Future of European Transport" and "Energy Future of Europe" are pursuing work in those fields that have been selected as focal areas of work for the period of 2006 to 2008.

« »

First Project Reports Available

The following pages provide summaries of final project reports prepared by ETAG that have so far been officially published by STOA. The full text of the reports is available for download on STOA's web page (http://www.europarl.europa.eu/stoa/default_en.htm) as well as on ETAG's (<http://www.itas.fzk.de/etag>) web page.

Reports on other projects which recently have been completed such as "The role of nanotechnology in chemical substitution", "RFID and identity management", "Future developments of cancer therapy" and "Alternative technology options for road and air transport" will be ready for publication soon.

"Technology Assessment on Converging Technologies"

The term "converging technologies" (CT) denotes an emerging field of technology development, which some expect to change everything, from the way we think to the way we live and the way we die – if death itself cannot be beaten. The technologies will be based on how the different sectors of the nano, bio, info and cogno sciences (NBIC in short) dovetail their applications through smart interaction, creating a true multitude of the sums of their parts. It is, however, by no means clear to what extent CT will become reality and to what extent CT will affect our life. Can and will convergence transform society? What are the opportunities and fears? What are the challenges for the scientific community, society and politics? These questions were at the focus of the STOA project carried out by the Flemish Institute for Science and Technology (viWTA). The project included a vision assessment with four well known experts in different disciplines, a broad review of pertinent literature and an expert workshop carried out at the European Parliament.

First of all the results of the project show that the first steps towards NBIC convergence have already been taken. NBIC convergence is taking place in the laboratories and research departments of the contributing convergent disciplines. Conferences are organised that address the cross-disciplinary issues, and research results are published in scientific journals that become increasingly cross-disciplinary. The seed of NBIC convergence has thus been planted in various new fields of research. In addition, policy makers have spotted NBIC convergence as a fruitful policy model to foster research and innovation. This is likely to lead to even more efforts in stimulating NBIC convergence. Furthermore, NBIC convergence is

expected to lead to a new paradigm, which blurs and challenges the current distinction between living and non-living materials and systems. Such a prospect, whether to be expected in the near or very far away future, brings up delicate ethical and political issues that need to be discussed in the public sphere. Even more so, if one assumes that today's research shapes tomorrow's technologies and the political debate should be about the kind of society we want in the future.

As to the authors of the study, the technoutopian 'Transhumanists' and techno-sceptical 'BioLuddits', which dominated the debate on CT for a long time, should, therefore, be praised for their early-warning function and attempts to put the issue on the public and political agenda. Their Heaven and Hell scenarios grab the attention of the media and policy makers and thus are effective in setting the agenda. Another benefit of these extreme future visions is that they expose the most sensitive issues in the debate and clarify the normative deep core issues at stake. However, the fact that the Heaven and Hell scenarios form a provocative base for the current debate on NBIC convergence, has two dangerous sides to it too. These two extreme scenarios start from the assumption of exponential development and radical change. The tone of the research efforts, however, is much more mundane than is reflected in many of the roadmaps and future vision documents that have been produced in the endless search for subsidies and new research markets. Moreover, it is largely unpredictable what the future will hold for NBIC convergence. Consequently, there exists a danger that the political debate be dominated by extreme futuristic visions that are speculative and do not reflect the current common day practices in ordinary research and development. To prevent an emerging polarisation within the public debate to become locked in, there is a need for developing alternative political images of the future. A *down-to-earth* attitude is recommended in combination with a serious and visionary effort to develop a consistent view on the many normative issues involved.

(Robby Berloznik; viWTA;
E-Mail:robby.berloznik@vlaamsparlement.be)

"Antibiotic Resistance"

Since the discovery of penicillin in 1928 and the subsequent development of other antibiotics, it has been possible to treat previously life-threatening illnesses such as pneumonia and tuberculosis as well as a variety of common bacterial infections. Antibiotics have also enabled advances in surgery as the survival rate of patients is greatly improved by the treatment (prophylactic and otherwise) of surgery-related infections. However in recent decades it has become apparent that the use of these medicines is also the key to rendering them ineffective. Bacteria are becoming increasingly resistant to the drugs commonly used against them, creating an inability to treat multi-drug resistant bacteria. Without this ability the costs of treating infections rise, both in economic terms and in the quantity and quality of human life.

The report contains a suggestion for an action plan consisting of six policy options based on knowledge acquired from the most recent reports and initiatives occurring primarily within Europe. An expert working group, set up by the Danish Board of Technology, has selected four areas where the EU can contribute to the containment of resistance: coordination, standardisation, stimulation, and research. The six options are as follows:

Policy option 1 (coordination): The coordinating role of the European Centre for Disease Prevention and Control (ECDC) could be strengthened by e.g. *developing a portal* through which all EU policy and legislative documents relating to antimicrobial resistance can be obtained and by developing a *database* of all national and European initiatives with regard to antimicrobial resistance, including both policy initiatives and research projects and for humans as well as for animals. Furthermore the *ECDC could be enabled to coordinate annual meetings with national authorities*, including liaison with veterinary and food safety colleagues at EU level.

Policy option 2 (standardisation): The use of the 'prescription only' principle across all Member States of the EU could be encouraged, for example, by providing monetary disincentives for governments in countries where more than a certain percentage of antimicrobials are dispensed without prescription.

Policy option 3 (standardisation): A voluntary accreditation programme could be developed which incorporates and co-develops European and international standards for hygiene, health and day-care, and building standards.

Policy option 4 (stimulation): The possibility of providing incentives to Member States to develop reimbursement systems that encourage the use of rapid diagnostic tests in general practice should be explored. These incentives could be via directive or by direct subsidisation, for example in countries with lower national incomes.

Policy option 5 (stimulation): Initiation of a matched funding policy, whereby the EU provides some matched proportion of the funding for national educational campaigns, with this matching determined in part by: the national income of the member country applying for funding (on equity grounds), the current extent of resistance (with greater resistance problems attracting a greater degree of funding), and the quality of the planned campaign (judged in a similar manner to research proposals, but concerned with clarity of objectives, clarity of methods, anticipated outcomes, adequacy of budget and so on).

Policy option 6 (research): More effort and funding needs to be directed toward the following areas: understanding cultural, contextual and behavioural aspects of antimicrobial usage; providing evidence about optimal methods of using different antimicrobial agents; developing methods to gather evidence and conduct analyses of the costs and benefits of containment strategies. There is no question that without containing the further development of antibiotic resistance, these drugs will be direly needed. However, refilling today's thin pipeline with new discoveries and then developing these into new drugs will take time. The working group firmly believes that if additional resources are to be spent on addressing the antibiotic resistance problem, immediate and concerted action to combat further antibiotic resistance will be of much greater benefit to society than increased public investment in antibiotic R&D.

(Ulla Holm-Vincentzen, DBT;
E-Mail:uh@tekno.dk)

"GALILEO Applications" STOA Workshop Report

The report provides the documentation of a Workshop on the perspectives of the European GALILEO satellite navigation system in September 2006.

The GALILEO Programme – a joint initiative of the European Community and the European Space Agency – is a European infrastructure project with a great potential for the European economy. The system is meant to ensure Europe's competitiveness in a global market in satellite navigation products and services. It is planned to be interoperable with the existing global satellite navigation system GPS (USA). It will, however, – other than GPS – be under civilian control and will provide a high level of accuracy, integrity and authentication of signals. The total public sector money committed so far for research and development activities by the EU and ESA is in the range of 2.5 billion €.

The workshop has been prepared by means of a questionnaire sent around to selected experts and by a background paper that was meant to illustrate different opinions and statements, which play a role in discussions about the programme. It was the objective of the workshop to clarify the validity of different statements and to provide the latest, up-to-date view on the GALILEO programme and its perspectives. The discussion during the workshop made obvious that the GALILEO project has entered a phase which is decisive for its further development and the realisation of its economic potential. For the running negotiations on the terms of a Public Private Partnership (PPP) which is the decisive step in the further progress of the programme, the central and problematic subject is "risk sharing". While an agreement has been reached that some of the risks have to be retained mainly by the private concessionaire, negotiations are still underway on the allocation of market risks (uncertainty about the amount and timing of revenues), replenishment risks (in view of uncertainties of technology and market environment) and third party liability risks between the private and the public side. The experts present at the workshop were

confident that they would bring negotiations to a successful closure in 2007.

Apart from an agreement on risk sharing the workshop brought up some other issues that have to be clarified and problems to be solved. Among these are:

- The terms of the hand-over of the system developed so far by ESA from the public to the private partner have to be settled.
- Commitments for covering costs have to be made. For the deployment of the full system a cost sharing scheme of 2/3 of costs covered by the private partner and 1/3 by the public partner was foreseen (total costs estimated to comprise 2.3 billion €). This cost sharing model is still regarded to be valid. However experts expect that plans have to be made for additional costs, which were not subject of calculation in the original business plan.
- There are a couple of policy issues to be addressed in order to support the development of the GALILEO by an appropriate regulatory environment.

Current State of the Galileo Programme

The relevance of the problems identified was confirmed at the meeting of the EU Transport Council in March 22, 2007 in Berlin. The Council stated that due to delays in the negotiation on the PPP the GALILEO programme is in a crisis. It is expected that the realisation of the satellite system has to be carried out without a partner from industry and that the costs (now estimated to be in the range of 3.5 to 4 billion €) have to be covered by ESA and the EU alone.

*(Leonhard Hennen, ITAS;
E-Mail: hennen@tab.fzk.de)*

« »

Als federführende Institution einer Gruppe von fünf europäischen Einrichtungen, der European Technology Assessment Group (ETAG; <http://www.itas.fzk.de/etag>), berät ITAS das Europäische Parlament in Fragen der sozialen, ökonomischen und ökologischen Bedeutung neuer wissenschaftlich-technischer Entwicklungen. Der im Oktober 2005 unterzeichnete Vertrag hat eine Laufzeit von zunächst drei Jahren. Direkter Adressat der Arbeiten von ITAS ist das so genannte STOA-Panel („Scientific and Technological Options Assessment“), – ein aus Mitgliedern verschiedener ständiger Ausschüsse des Parlamentes zusammengesetztes parlamentarisches Gremium zur Technikfolgenabschätzung (http://www.europarl.eu.int/stoa/default_en.htm). ITAS (als federführende Einrichtung) kooperiert mit folgenden Partnern:

- Rathenau-Institut, Niederlande,
- Parliamentary Office of Science and Technology (POST), Großbritannien,
- Danish Board of Technology (Teknologirådet), Dänemark,
- Flemish Institute for Science and Technology Assessment (viWTA), Belgien.

Kontakt

Dr. Leonhard Hennen
ETAG-Koordinator
ITAS
c/o Helmholtz-Gemeinschaft
Ahrstraße 45, 53175 Bonn
Tel.: +49 (0) 228 / 308 18 - 34
Fax: +49 (0) 228 / 308 18 - 30
E-Mail: hennen@tab.fzk.de

Dr. Michael Rader
ITAS
Forschungszentrum Karlsruhe
Hermann-von-Helmholtz-Platz 1
76344 Eggenstein-Leopoldshafen
Tel.: +49 (0) 72 47 / 82 - 25 05
Fax: +49 (0) 72 47 / 82- 48 06
E-Mail: michael.rader@itas.fzk.de

« »