

EUROPEAN COMMISSION



JUNE 2009

**FOURTH STATUS REPORT ON
EUROPEAN TECHNOLOGY PLATFORMS
HARVESTING THE POTENTIAL**



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Introduction

In March 2003, the European Council called for a strengthening of the European research and innovation area by ‘... creating European technology platforms bringing together technological know-how, industry, regulators and financial institutions to develop a strategic agenda for leading technologies’.

European technology platforms (ETPs) were set up as industry-led stakeholder forums with the aim of defining medium to long-term research and technological objectives and developing roadmaps to achieve them. Their aim was to contribute to increasing synergies between different research actors, ultimately enhancing European competitiveness.

The European Commission has supported the development of ETPs and has carried out a facilitation role. ETPs are bottom-up, industry-led initiatives; the Commission participates in their events as an observer and is committed to a structured dialogue on research priorities.

All ETPs have brought together stakeholders, reached consensus on a common vision and established (and in some cases already revised) a strategic research agenda (SRA). Some of them have also developed an implementation plan detailing the actions required to implement the SRA.

At the end of 2008 there were 36 ETPs ⁽¹⁾, spanning a wide range of technologies. This figure includes four new platforms (sustainable nuclear energy, mineral resources, heating and cooling technologies and farm animal breeding), two of which are already included in this report.

The fourth ETPs Status Report provides an overview of platform activities in the past two years. For more detailed information about each one of the platforms and their strategic research agendas, the contact details of platform secretariats are all available on CORDIS.

Major developments in 2007/08

The past two years mark a period of change for ETPs.

- **Shaping the Community research priorities** — The seventh framework programme (FP7) was launched at the end of 2006 and has now been operational for two years: ETPs helped to shape FP7 and have continued to contribute their suggestions to the yearly work programmes. At the same time, successful project proposals submitted by ETP members have already been launched as FP-funded research projects.
- **Platform operations** — While many ETPs financed the launch of their activities with the support of framework programme funds, these projects are now over or coming to an end. Several platforms have already acquired legal entity status, establishing themselves as non-profit organisations with membership fees. Some platforms have also moved forward in professionalising their activities, for example by creating databases of research projects carried out by their members.

⁽¹⁾ http://cordis.europa.eu/technology-platforms/individual_en.html

- **Shaping framework conditions** — Moreover, ETPs are increasingly having an impact on policy initiatives that are complementary to or build upon R & D policies. Recent examples include the Lead Market Initiative, the Strategic Energy Technology Plan (SET Plan) and the environmental technologies action plan. ETPs also took part in the consultation for the Green Paper on the future of the European research area.
- **Mobilising funds** — ETPs have been active beyond the framework programme: they have explored tapping into funds offered by national and regional programmes, Structural Funds, or financing instruments of the European Investment Bank (EIB). Several platforms have participated in the launch of a Joint Technology Initiative (JTI ⁽²⁾), a public–private research partnership established in order to implement all or part of their strategic research agendas. As a result, two of them (innovative medicines and fuel cells and hydrogen) have ceased to exist as ETPs and focused on implementation through their JTIs. Other platforms see the JTI as one of several objectives and will continue operating their ETP in parallel.

In the past two years ETP leaders met three times (in June 2007, December 2007 and September 2008) to discuss the future of the European research area, the potential of international research cooperation, and the role of ETPs in several European policy initiatives (the Lead Market Initiative, the SET Plan for energy technologies, and the ESFRI roadmap for research infrastructures). They have also exchanged best practices as regards liaising with Structural Funds managing authorities and with the European Investment Bank’s Risk Sharing Finance Facility ⁽³⁾.

A smaller, exploratory, meeting was organised in spring 2008 to discuss interactions between ETPs and national research actors. Participants identified the potential to improve coordination with national research planners, and discussed the role of Mirror Groups in different platforms. The linkages with ERA-NETs and Eureka were also covered ⁽⁴⁾.

At the end of 2007 the European Commission launched the first external assessment of the evolution and impact of European technology platforms. The ETP evaluation study was published in August 2008 and is available on CORDIS ⁽⁵⁾.

The evaluation study was developed on the basis of information collected from individual ETPs and a survey of over 900 ETP stakeholders. The study notes the success of ETPs in mobilising broad networks of stakeholders bringing together public and private researchers and technology users to define research priorities. Overall 93 % of respondents to the survey would renew their membership in the ETP community, which points to a high degree of satisfaction in general. However, stakeholders see more impact in the area of strategic work (defining research priorities) than in mobilising resources for research. The study concludes that it is too early to measure the impact of ETPs in terms of executing strategic research agendas, but that the focus of their work should from now on be on implementation.

⁽²⁾ <http://cordis.europa.eu/fp7/jtis>

⁽³⁾ http://cordis.europa.eu/technology-platforms/seminar_en.html

⁽⁴⁾ http://cordis.europa.eu/technology-platforms/seminar10_en.html

⁽⁵⁾ <ftp://ftp.cordis.europa.eu/pub/technology-platforms/docs/evaluation-etps.pdf>

The study underlines:

- the potential of improving linkages with national research policy actors;
- the need for ETPs to extend, where appropriate, their activities on framework conditions for research and innovation;
- the need for ETPs to monitor implementation of their SRAs;
- the potential for ETPs to contribute to addressing human resources needs in research;
- a risk of fragmentation derived from overlaps between platforms, which should lead to a careful assessment of new platforms and increased cooperation efforts between sectors;
- a potential to develop international research collaboration in some areas;
- a potential to develop financial strategies in order to mobilise funding;
- a need for ETPs to professionalise their operations in terms of monitoring of projects, maintenance of their websites and internal organisation in general.

Next steps

The European Commission is committed to its structured dialogue on research policy and priorities with European technology platforms. An expert group bringing together different profiles and technological backgrounds will propose ways forward in the course of 2009, taking into account the experience and recent developments in the activities of ETPs and the conclusions of the ETP evaluation study.

The Commission will also explore the potential to improve communication with national platforms and other national research actors, and further cooperation across platforms will also be encouraged in the context of future policy initiatives. The European technology platforms' website on CORDIS ⁽⁶⁾, the ETP newsletter ⁽⁷⁾ and the regular ETP leaders' seminars will ensure communication about policy developments and the timely exchange of best practices.

⁽⁶⁾ http://cordis.europa.eu/technology-platforms/home_en.html

⁽⁷⁾ Register at http://ec.europa.eu/invest-in-research/newsletter/newsletter_en.htm

Launch

2001

Website

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Vision document — 2001

‘European aeronautics: a vision for 2020’

<http://www.acare4europe.com/docs/Vision %202020.pdf>

Strategic research agenda

2002, updated in 2004

<http://www.acare4europe.com/html/documentation.asp>

Addendum to the **Strategic Research Agenda - 2008**

http://www.acare4europe.com/docs/ACARE_2008_Addendum.pdf

Advisory Council for Aeronautics Research in Europe (ACARE)

The air transport industry makes a significant contribution to the prosperity of Europe, both as a manufacturing sector and as an enabler of the effective transfer of people and goods.

The sector generates EUR 220 billion of direct added value for the EU economy representing some 2.6 % of Europe’s GDP. Moreover, air transport is important to many other sectors (e.g. tourism) and the contribution of the sector to the EU’s wider economy is estimated to be well over 10 %. To achieve this, the sector employs 3.1 million people, many of whom are highly skilled workers.

The Advisory Council for Aeronautics Research in Europe (ACARE) was established in 2001 with the main aim of establishing and carrying forward a strategic research agenda (SRA) that will influence all European stakeholders in the planning of research programmes in the aeronautics industry, particularly national and EU programmes. To this end it brings together a large number of stakeholders, including representatives from the manufacturing industry, airlines, airports, service providers,

regulators, the research establishments/academia and representatives from Member States and the Commission.

However, the sector faces a number of important challenges such as environmental concerns and an expected tripling of passenger demand over the next 20 years.

Strategic research agenda

The second edition of the strategic research agenda aimed at taking a more holistic view of the air transport system, extending the range of situations considered and improving the integration of sectors and technologies. For this reason, the SRA is based on six scenarios (called high level target concepts or HLTCs), which allows to improve the connection of the technologies with the relevant scenarios. These six scenarios are:

- (1) highly customer-oriented air transport system,
- (2) highly time-efficient air transport system,
- (3) highly cost-efficient air transport system,
- (4) ultra-green air transport system,
- (5) ultra-secure air transport system,
- (6) towards the future — an assessment of long-term possibilities.

The SRA also identifies the institutional needs regarding the relevant technologies (e.g. investments in facilities, cooperation in the construction of new facilities, research cooperation, education, public policy for qualification and mobility of researchers), taking a vision of the future extending beyond 2020.

Update on platform activities

Four years after the publication of the second issue of the Aeronautics SRA, the Strategic Review Group of ACARE has undertaken a review of challenges and priorities to take account of major recent global developments affecting the air transport sector. This **addendum to the SRA** is intended to bridge the time between the last issue of the SRA and a full review of aeronautics, its direction and goals, which is expected to take place in 2010. The addendum focuses on three priorities: the environment, alternative fuels and security. It also includes a review of business models, international collaboration, infrastructures and education for aeronautics.

In parallel, ACARE has monitored the **implementation of the strategic research agenda** by its stakeholders. The EU research framework programme and national funding sources are some of the implementation tools, together with the Clean Sky Joint Technology Initiative. ACARE has no direct involvement in Clean Sky but acts as external advisory body to ensure coherence of the Clean Sky work with the strategic research agenda, of which Clean Sky implements one of the scenarios (the ultra-green air transport system). Clean Sky has been set up to prepare six so-called integrated technology demonstrators, which will validate technologies developed in previous projects. ACARE prepared two position papers during the development of Clean Sky, giving recommendations to the EC, Member States and industry. Another tool to implement a part of the strategic research agenda is the SESAR Joint Undertaking, created in February 2007 under European Community law, to modernise the European air traffic control infrastructure.

During 2007 ACARE stakeholders obtained framework programme funds for several projects that support the monitoring and implementation of the platform's strategic research agenda: one project for measuring progress towards its 'Vision 2020', one assessing the impact of its FP projects and one for the development of a technology-watch mechanism. ACARE is not directly involved in the preparation and coordination of technical proposals, but ACARE members and stakeholders are active in almost all proposals in the aeronautical call. The platform currently counts 46 members, who contributed human resources to the work of the ACARE and its groups.

The basic **structure** of ACARE has not changed. The plenary meeting is supported by the integration team, in which the working groups are represented by their chairpersons and rapporteurs. The working groups are: the Implementation Group, monitoring the implementation of the SRA; the Communication Group; the institutional groups (Human Resources, Research Infrastructures); and the Member States' Group.

The number of countries represented in the Member States' Group has grown to 25. The mission of the group is to foster the optimum involvement of Member States and their regions in the development of the European air transport system. Other specific tasks consist of assisting with implementation issues in Member States related to ACARE and its strategic research agenda and integrating the new Member States' representatives into ACARE and its processes. For the same purpose, **national platforms** were created in Spain, Italy and Austria over the past year.

Contacts with other ETPs and advisory groups have continued, especially with EPoSS (Smart Systems Integration), *Manufuture* (manufacturing) and EIRAC⁽⁸⁾ (European Intermodal Research Advisory Council, a large formal network embracing the transport ETPs and covering ACARE, ERRAC, ERTRAC and Waterborne). The purpose is to exchange good practices and identify common priorities.

The platform has been interacting with the ERA-Net project Air Transport Net (AirTN), especially through its Member States' Group. This project aims at coordinating Europe-wide efforts in the field of aeronautics research, with particular emphasis on bringing new EU Member States into the aeronautical community, offering important opportunities for industrial development in this sector especially for eastern Europe⁽⁹⁾.

Some ad hoc groups on specific topics have been created for a dedicated task. One group has been working on research with respect to emission trading system in aviation (ACARE also developed a position paper on this topic). Another group is currently working on coherence between the SRA and FP7 work programmes, in order to make proposals as to how to implement the SRA as efficiently as possible.

Two plenary meetings have been held: one in the autumn of 2007 and one in the spring of 2008. In parallel, ACARE was represented by a speaker in a broad range of events.

⁽⁸⁾ <http://www.eirac.net>

⁽⁹⁾ <http://www.airtn.eu/eCache/AIR/1/374.html>

In 2008, the Addendum to the **Strategic Research Agenda** was published.

Next steps

While preserving its advisory role on aeronautical research in Europe ACARE intends to focus its efforts on:

- measuring the progress towards the ambitious ACARE goals (AGAPE);
- developing an impact assessment of FP projects (MEFISTO) with respect to technological developments and innovation;
- developing a technology watch mechanism;
- developing position papers on key issues;
- developing a position on international cooperation.

In the longer term, the following activities are foreseen:

- improving coherence between the EC and Member States' research and technology programmes and continuing the realisation of joint programming already achieved by ACARE stakeholders;
- extending the 'visionary horizon' beyond 2020.

Launch

2004

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Strategic research agenda — 2006

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Advanced Research and Technology for Embedded Intelligence and Systems (ARTEMIS)

Some 98 % of computing devices are now embedded in all kinds of equipment. Computers are found in everyday devices such as mobile phones, credit cards, domestic TVs, multimedia equipment and washing machines, as well as in cars and planes, offices and factories. In the next five years, the share of the value of embedded electronics components in the value of the final product is expected to reach significant percentages in areas such as industrial automation (22 %), telecommunications (37 %), consumer electronics and intelligent homes (41 %) and health/medical equipment (33 %).

Over four billion embedded processors were sold last year and the global market is worth EUR 60 billion, with an annual growth rate of 14 %. Forecasts predict more than 16 billion embedded devices by 2010 and over 40 billion by 2020. In the automotive sector, given that 20 % of the value of each car today is due to embedded electronics and that this is expected to increase to an average of 35–40 % by 2015, more than 600 000 new jobs will be created in Europe in automotive embedded systems alone.

But segmentation of markets with their differing requirements has resulted in a fragmented supply industry and research field, and the main challenge for the sector is now the lack of cross-fertilisation and reuse across different industrial domains. Bringing together industry, research institutes and academia, one of the main ambitions of ARTEMIS is to overcome this fragmentation; cutting barriers between application sectors, sharing across sectors tools and technology that are today quite

separate, and establishing a new embedded system industry that supplies tools and technologies applicable in a wide range of sectors.

Strategic research agenda

The ARTEMIS strategic research agenda, published in June 2006, outlines the objectives and research topics that need to be investigated in the field of embedded systems. Given the wide range of applications, the SRA identified four representative 'application contexts', including;

- industrial systems — large, complex and safety-critical systems, which embraces automotive, aerospace, manufacturing, and growth areas such as biomedical;
- nomadic environments — enabling portable devices and on-body systems to offer users access to information and services while on the move;
- private spaces — such as homes, cars and offices, offering systems and solutions for improved enjoyment, comfort, well-being and safety;
- public infrastructure — major infrastructure such as airports, cities and highways that embrace large-scale deployment of systems and services that benefit the citizen.

The ARTEMIS strategy is to establish common technology to support the development of high value-added embedded systems across these application contexts. To achieve this, the SRA was amplified with more specific research priorities. These three parts of the 'full SRA' are concerned with:

- reference designs and architectures; establishing common requirements and constraints that should be taken into account for future embedded systems, as well as generic reference designs and architectures for embedded systems that can be tailored optimally to their specific application context;
- seamless connectivity and middleware; addressing the needs for communication at the physical level — networks; at the logical level — data; and at the semantic level — information and knowledge;
- system design methods and tools; setting out the priorities for research into the ways that these systems will be designed in future so as to accommodate (and optimise the balance in achievement of a number of conflicting goals: system adequacy relative to requirements, customer satisfaction, design productivity, absolute cost, and time to market.

Update on platform activities

In January 2007, a number of ARTEMIS members (Daimler, Nokia, Philips, STMicroelectronics, and Thales) founded the ARTEMISIA Association (<http://www.artemis-association.eu>). Currently, ARTEMISIA has more than 150 members and associates, including large firms, SMEs, universities and research institutes. ARTEMISIA is a follow up of the ARTEMIS ETP and will be responsible for the ARTEMIS strategic research agenda. ARTEMISIA is also a founding member of the ARTEMIS Joint Undertaking, the legal embodiment of a Joint Technology Initiative (JTI).

During 2007, ARTEMISIA developed eight sub-programmes for the Joint Technology Initiative, based on the SRA published by the ARTEMIS ETP in 2006.

The Joint Technology Initiative was set up to drive forward the SRA of the ARTEMIS ETP. As a first step in this process, the Commission adopted on 15 May 2007 a proposal for a Joint Undertaking. After a positive vote in the European Parliament on 11 December 2007, the Council adopted a regulation on 20 December 2007 after which the Joint Undertaking was formally established on 7 February 2008. The ARTEMIS Joint Undertaking is a public–private partnership between the European Commission, 20 Member States and the ARTEMISIA Association (<http://www.artemis-ju.eu/>).

The ARTEMIS-JU will operate until 31 December 2017 and will define and implement a 10-year R & D funding programme on embedded systems that is open for all R & D actors in all Member States of the European Union and associated countries. Selected projects will be co-funded by the EC and those Member States that have joined the ARTEMIS Joint Undertaking. This is expected to lead to a total programme size of about EUR 2.4 billion. The first call for the ARTEMIS Joint Undertaking programme was launched in May 2008 and should generate research activity worth more than EUR 200 million. Proposals should be collaborative and involve at least three independent participants from three ARTEMIS Member States.

Next steps

The ARTEMIS ETP will continue to operate as one of the tasks of the ARTEMISIA Association. In October 2008, ARTEMISIA organised a co-summit with ITEA 2 on 'European competitiveness and well-being through ICT-based innovation', as part of the ARTEMISIA annual event and the ITEA 2 Symposium. Besides this, ARTEMISIA was closely involved in the most important forum for discussing research and public policy in information and communication technologies at European level: ICT Event 2008 organised by the European Commission and the French EU Presidency in November 2008.

Recently ARTEMISIA embarked on a new ARTEMIS focus area: building and maintaining self-sustaining cross-national innovation ecosystems on embedded systems, including stimulating centres of innovation excellence on embedded systems. Workshops are taking place in 2009 to develop plans on how to achieve the first milestones in this approach.

Moreover, ARTEMIS-JU and ARTEMISIA will continue their coordination with the other platforms in the ICT area (ENIAC, eMobility, NEM and NESSI) in order to minimise overlaps and to ensure that synergies are being exploited.

Launch

June 2006

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Vision document — 2006

Biofuels in the European Union: a vision for 2030 and beyond

http://www.biofuelstp.eu/downloads/biofuels_vision_2030_en.pdf

Strategic research agenda and strategy deployment document — January 2008

http://www.biofuelstp.eu/srasdd/080111_sra_sdd_web_res.pdf

European Biofuels Technology Platform (EBTP)

The European Union has set ambitious objectives on renewable energy and sustainable biofuels to tackle the challenge. In 2007, 7.7 Mtoe (million tonnes of oil equivalent) of biofuels were consumed in the EU-27, accounting for 2.6 % of road transport fuels. This figure needs to rise rapidly if Member States are to achieve the target of 5.75 % by 2010, as set in the European biofuels directive, and 10 % by 2020 as proposed in the Renewable energy directive.

The European Biofuels Technology Platform (EBTP) was established in 2006 to contribute to the development of cost competitive world class biofuels technologies and accelerate the deployment of sustainable biofuels in the European Union, allowing the development of a healthy biofuels industry, through a process of guidance, prioritisation and promotion of research, development and demonstration activities.

It brings together the knowledge and expertise of stakeholders active in the biofuels value chains: biomass resources providers, biofuels and bio-energy producers, technology vendors, transportation fuels distributors and marketeers, road transportation industry, and research and technology development organisations. It is managed by a Steering Committee and supported by a Secretariat, the European Commission being an active observer. Stakeholders can register and share access to key contacts, internal and external reports, events, opinions and expertise on biofuels R & D.

Platform activities are carried out through five working groups (Biomass, Conversion, Logistics and End-use, Sustainability, and Markets and Regulations) which were established after the launch of the European Biofuels TP in June 2006. The working groups have prepared a strategic research agenda and a strategy deployment document which were presented on 31 January 2008 at the first EBTP stakeholder meeting in Brussels, attended by over 300 delegates.

Strategic research agenda and strategy deployment document key findings and recommendation

The SRA identifies key R & D priorities required in order to reach the vision of up to 25 % substitution of road transport fossil fuels by biofuels in 2030. Three main areas of technology development have been covered: biomass production and supply, conversion processes and end use.

Feedstocks:

- develop availability-cost curves for different sources of biomass (energy crops, forestry and agriculture residues, wastes) and geographical locations;
- develop new high-yield and low-input agricultural and forest systems with breeding of crops and trees optimised for biofuel production;
- develop efficient biomass logistic systems (harvesting/collection/storage) for different conversion concepts at different scales.

Conversion processes:

- improve current conversion processes to their full potential (biodiesel, bioethanol from starch-sugar) for higher GHG reduction, increased flexibility for different raw materials and lower cost;
- develop thermochemical and biochemical conversion processes with feedstock flexibility for different lignocellulosic biomass (BtL, L-C bioethanol);
- develop integrated biorefinery concepts making full use of a variety of biomass feedstocks to obtain diverse high-value bioproducts;
- demonstrate at both pilot and industrial scale the reliability and performance of new technologies.

Fuel/engine optimisation:

- establish conditions for compatibility of biofuels and biofuel blends with existing logistics, as well as existing and new power trains; develop vehicle modifications for neat biofuels and high blends for specific market needs;
- generate engine-fleet test data and set sound quality standards for biofuels;

- develop in-depth understanding of relationship between biofuel quality and engine performance for future fuel/power-train systems in order to deliver superior combined performance.

Overall system sustainability:

- further develop indicators and coherent methodology to assess and monitor the three dimensions of sustainability: economic, environmental, social;
- generate and collect data and carry out sustainability assessment of existing and potential promising production chains (land, feedstock, process, fuel use).

Update on platform activities

The platform currently counts around 130 members. The structure of the EBTP consists of a Steering Committee, a Mirror Group consisting of representatives of the Member States (currently 13 countries), associated candidate countries and other associated states, a Secretariat and six working groups (WGs):

- (1) biomass resources;
- (2) conversion processes;
- (3) product distribution and use;
- (4) sustainability;
- (5) markets and regulation;
- (6) prioritisation: this working group was established in March 2008, in order to identify priority areas for R & D to support EU biofuels ambitions and prepare EBTP's contribution to the European Industry Initiative on Bio-Energy ⁽¹⁰⁾.

Biofuels R & D mapping initiative: To develop an overview of the current state of biofuels R & D in Europe vis-à-vis the Biofuels TP SRA, a database has been created to map the main ongoing projects of direct relevance to the SRA. Initial coverage includes EU and Member States-funded projects; it should be enlarged to other relevant countries. The database covers studies, research and demonstration projects.

Biofuels R & D prioritisation and European industrial initiative on bio-energy: The broad portfolio of R & D topics of relevance to EU biofuels R & D (as presented in the EBTP SRA) and the very significant challenges presented to biofuels stakeholders by the ambitious EU renewables and biofuels objectives are calling to sharpen the focus and identify priority areas for R & D. This is the main task of the recently established working group on 'Prioritisation'. A major outcome of its work is to propose EBTP's contribution to the shaping of the EII-B.

Strengthening links with relevant ETPs: Since February 2008, the Biofuels TP has been intensifying links and activities with several relevant European technology platforms, including three related to the Knowledge-Based Bio-Economy (Forest, Plants for the Future, and SusChem). Examples of areas of potential collaboration with KBBE-related ETPs include bio-feedstock issues and sustainability. A proposal

⁽¹⁰⁾ In February 2008, the Energy Council of Ministers adopted the SET Plan as a basis for its energy technology policy for Europe, aiming at the wide-scale application of low-carbon technologies. The SET Plan is calling for strategic planning and new governance to align technology development with energy policy goals. Among the tools envisaged for the implementation of the SET Plan, European Industrial Initiatives are expected to play a critical role. The European Industrial Initiative on bio-energy (EII-B) is one of the six priority initiatives that have been proposed. EBTP aims at contributing actively to the shaping of EII-B.

to improve cooperation of KBBE ETPs has been submitted under the last KBBE call 'Coordinating the activities of KBBE relevant European technology platforms (KBBE-2008-1-4-11)'. This BECOTEPS proposal (the Bio-Economy Technology Platforms join forces to address synergies and gaps between their strategic research agendas) is currently under contract negotiation.

Communication activities

- Plenary meetings on 31 January 2008 (approximately 300 participants) and 22 January 2009.
- Extensive website has been set up and is regularly updated and expanded (i.e. the Biofuels R & D mapping database on pilots and demos, etc.). It is a key tool for communication and exchange with EBTP stakeholders.
- EBTP Chair, Vice-Chairs and Secretariat are presenting the platform and its activities at various conferences/meetings.

Next steps

Overall, EBTP's current and future efforts will mostly be directed to:

- providing input to SET Plan and renewable energy directive: identifying, analysing and prioritising biofuels and bio-energy value chains of main relevance to contribute to EU objectives via EII-B;
- strengthening the links and building on synergies with other ETPs of relevance to EBTP (Plants for the future, Forestry, SusChem, ERTRAC, etc.).
- mapping the main R & D and pilot/demonstrations activities of relevance to EBTP's SRA, to help identify gaps, limit duplication of efforts and identify most relevant areas for new projects and or call for proposals;
- bringing a positive contribution to the ongoing debates on biofuels by highlighting the need for rational and fact based policies and regulations, as well as corresponding R & D activities;
- developing communication activities via its website and the organisation or participation in relevant conferences and seminars.

Launch

July 2004

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Vision document — 2005

‘Challenging and changing Europe’s built environment. A vision for a sustainable and competitive construction sector by 2030’

<http://www.ectp.org/documentation/ECTP-Vision2030-25Feb2005.pdf>

Strategic research agenda — 2005

‘Achieving a sustainable and competitive construction sector by 2030’

http://www.ectp.org/documentation/ECTP-SRA-2005_12_23.pdf

Implementation action plan — 2007

http://www.ectp.org/documentation/SRA_IAPv1.pdf

European Construction Technology Platform (ECTP)

The European construction sector is faced with ever growing challenges. Societal developments, such as an ageing and growing population, lead to demands for more comfort, better mobility and more safety and security. Moreover, the impact of the construction sector on the environment and sustainable development is significant. Buildings account for 40 % of the EU’s energy demand. Construction uses more raw materials than any other sector; the creation and operation of the built environment accounts for an important consumption of natural resources.

The estimated construction investment reached EUR 1.196 billion in 2006 (EU-27); this represents 10.4 % of GDP, 50.5 % of gross fixed capital formation, 2.7 million enterprises (EU-27) and 15.2 million or 7.2 % of Europe’s total employment operatives. That means 30.4 % of industrial employment and 26 million workers in the EU depend, directly or indirectly, on the construction sector. It is the biggest industrial employer in Europe ⁽¹⁾. The sector supplies our living and working

⁽¹⁾ <http://www.fiec.eu>

infrastructure and, due to its size and the long life of structures, the built environment has a strong impact on society and on European growth and quality of life ⁽¹²⁾.

The European Construction Technology Platform (ECTP) aims to mobilise the whole construction sector — contractors, authorities, architects and other designers, purchasing bodies, and the full range of suppliers, clients and users — to find a clear set of common research priorities.

The platform's vision envisages a European built environment designed, built and maintained by a successful knowledge and demand-driven sector, providing a high quality of life and demonstrating a long-term responsibility to the environment.

Strategic research agenda

The ECTP strategic research agenda defines the research that needs to be carried out to achieve the platform's vision by establishing a clear set of directions, divided into three pillars.

- (1) Meeting clients'/users' requirements by aiming for healthy, safe, accessible and stimulating indoor environments for all; a new image of cities; an efficient use of underground city space; and mobility and supply through efficient networks.
- (2) Becoming sustainable by aiming for a reduction of resource consumption; the sustainable management of transport and utilities networks; a living cultural heritage for an attractive Europe; and the improvement of safety and security.
- (3) Transforming the construction sector by aiming for a new client-driven, knowledge-based construction process; ICT and automation; high added-value construction materials; and attractive workplaces.

For each of these pillars, the SRA defines the medium and long-term areas on which research needs to focus. Moreover, the SRA outlines actions to address a number of horizontal issues including:

- removing barriers to innovation,
- developing a single European construction market, and
- training and education.

Update on platform activities

To improve its efficiency and the availability of resources for its further activities, the ECTP is currently changing its structure. An executive committee with the task of monitoring the activities of the platform has been set up within the decision taking body, the High Level Group. Under the new structure the members of the High Level Group will be elected by the members of the platform, and there will be a Secretary-General. As regards financing the activities of the platform, a system of fees (four different levels for companies, research organisations, SMEs and associations) has been set up.

⁽¹²⁾ <http://www.ectp.org>

The ECTP further developed the network of national technology platforms, which currently has 26 members, most of them in close contact with their respective governments. Cooperation is taking place through meetings of NTP contact points and through a Eureka umbrella project (EurekaBuild) ⁽¹³⁾.

Moreover, ECTP is cooperating with other technology platforms linked to construction and/or energy aspects (e.g. the Steel Technology Platform, Hydrogen and Fuel Cells, Sustainable Chemistry, etc.). This collaboration led to a common proposal for a lead market pilot action on 'sustainable construction' ⁽¹⁴⁾. The ECTP has also developed strong links with some ERA-NETs, especially Erabuild and Eracobuild on the construction and operation of buildings ⁽¹⁵⁾.

In order to develop the SRA towards practical application, the European Construction Technology Platform published in 2007 an implementation action plan, selecting the most important research areas to be addressed over the following five years (2007–13). The plan focuses on nine priority areas including:

- technologies for healthy, safe, accessible and stimulating indoor environments for all;
- innovative use of underground space;
- new technologies, concepts and high-tech materials for efficient and clean buildings;
- reduce environmental and man-made impacts of built environment and cities;
- sustainable management of transport and utilities networks;
- a living cultural heritage for an attractive Europe;
- improve safety and security within the construction sector;
- new integrated processes for the construction sector;
- high added-value construction materials.

The platform has also adopted a proposal for a public–private partnership on energy efficient buildings (E2B JTI ⁽¹⁶⁾). This proposal follows the energy policy for Europe package, adopted early in 2007, and offers a joint research effort to ensure the built environment contributes to the targets of 20 % energy consumption reduction, 20 % use of renewable energy sources (RES) and 20 % reduction in CO₂ emissions.

Next steps

The European Construction Technology Platform intends to update and implement the SRA at European, national and transnational levels, as well as to continue promoting and following up research projects. Additionally, it aims at increasing the participation of SMEs and users/consumers.

The platform will also explore all possibilities in the field of public–private partnerships.

⁽¹³⁾ <http://www.ectp.org/eurekabuild2.asp>

⁽¹⁴⁾ http://ec.europa.eu/enterprise/leadmarket/sustainable_construction.htm

⁽¹⁵⁾ <http://cordis.europa.eu/coordination/era-net.htm>

⁽¹⁶⁾ <http://www.e2b-jti.eu>

Launch

2004

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Strategic Research Agenda, Revision 7 - 2008

http://www.emobility.eu.org/SRA/eMobility_SRA_07_090115.pdf

Strategic Applications Research Agenda, Version 1 - 2008

http://www.emobility.eu.org/SAA/Strategic_Applications_Agenda_v1-0.pdf

Mobile and Wireless Communications Technology Platform (eMobility)

Over the past decade, European industry has established a clear global industrial and technology leadership in the field of mobile communications. Moreover, there is a huge opportunity to add mobility to Internet accessibility, effectively allowing citizens to carry the power of the Internet with them anywhere at any time. However, the sector faces important challenges over the coming years to maintain its lead including increasing R & D investment in other regions, changing behaviour and expectations by users and poorly developed links between industrial policy and R & D.

In order to maintain Europe's position in the global market for mobile and wireless systems in the 2010–15 time horizon, it will be necessary to develop large-scale European approaches to system research and development, and to mobile services and applications in the context of digital convergence. In this context, the eMobility Technology Platform was established to bring together all organisations with a strong strategic commitment to European R & D in the area of mobile and wireless systems applications and services. The overall aim of the platform is to improve the individual's quality of life, achieved through the availability of an environment for instant provision and access to meaningful, multi-sensory information and content.

Strategic research agenda

The strategic research agenda (SRA), proposes a research methodology based on Europe's unique strength and approach to research and development in telecommunication systems.

Future systems will be complex, consisting of a multitude of service and network types ranging across wireless sensor networks (WSN), personal area, local area, home networks, and moving networks to wide area cellular networks. The increasing dependency of society on such communication infrastructure requires considerations of new applications and requirements into their design as well as new research methodology to realise them.

The methodology is captured in a new concept called the 'SET concept' that underscores the need for a three-dimensional vision of research activities that will deliver simplicity, efficiency and trust, strongly advocating 'integrated' research and 'end-to-end' solutions.

'Simplicity' is to enable simple use of services, services deployment and enhancement and simple and self-optimising operations, maintenance and upgrades.

'Efficiency' emphasises on efficient use of networks' all types of resources.

'Trust' considers the new requirements and needs of modern societal dependency on use and full availability of such systems in carrying out their daily lives with robust security and resilience in face of variety of natural and man-made disasters.

Several strategically important technologies and non-technical barriers have been identified and justifications provided for their considerations into future national and European research programmes. The technological-related chapters are complemented with newly identified applications from other industries needs and expectations from mobile and wireless technologies. Further work on 'flexible business infrastructures' is justified, demonstrating different business models and business interfaces that are envisaged in future.

Update on platform activities

The eMobility TP has currently over 570 members from 34 countries. In addition to the research (201), industry (119) and SME members (221), there are liaison and observer members (30). In 2008, the operational costs of the platform are partly covered through the eMobility CA project.

The structure of the platform was slightly modified for 2008; in particular new working groups were introduced. The working group 'Testing facilities' has put significant effort into informing members about testing facilities initiatives, sharing best practices and influencing the prioritisation of testing activities in regional, national or European work programmes. A road-mapping working group was established to develop an overview of the roadmaps of the sector for new technology.

National branches were created in several countries, including Hungary, Norway, Slovenia and Spain. Coordination with Member States was pursued through the Mirror Group, currently representing eight countries.

The platform has actively cooperated with other platforms, mainly NEM, NESSI and ISI, leading to a number of joint initiatives:

- joint papers, workshops and Mirror Group meetings related to the further development of the future Internet in 2007 and 2008;
- joint events at the Service Wave Conference in December 2008 in Madrid ⁽¹⁷⁾;
- submission of a coordinated set of proposals from the four platforms for calls 4 and 5 of the seventh framework programme.

In the field of international cooperation, the platform organised a joint meeting with four other relevant organisations including the Japanese NICT organisation, the FUTURE Forum of China, the WIBRO forum of Korea and the global Wireless World Research Forum.

The platform has carried out a number of communication activities, including:

- the organisation of the eMobility Summit in June 2008 in Stockholm (Sweden) with the aim to support networking between the members and the formation of a consortia for call 4 and 5 of FP7;
- the set up of first International Workshop on Green Wireless (workshop on energy-efficient and low-interference emission wireless technologies) in September 2008 in Lapland (Finland) with the agenda of lowering energy consumption of future wireless radio systems and reducing the electromagnetic radiation levels to achieve a better coexistence of wireless system (less interference) as well as a reduced human exposure to radiations ⁽¹⁸⁾.

Moreover, additional communication actions have included the launch of a quarterly printed newsletter, a monthly email newsletter, the development of a section in Wikipedia, the production of posters for exhibitions, the official publication of the revised strategic research agenda and the first edition of the Strategic Applications Research Agenda.

Next steps

The eMobility Platform will focus on:

- further investigating the options for public–private partnership together with the other ETPs active in the ICT area ⁽¹⁹⁾;
- further supporting networking between members and the formation of consortia for FP calls;
- organising the next ICT Mobile Summit in June 2009 in Spain;
- publishing the SRA, Version 8 in November 2009.

⁽¹⁷⁾ <http://www.servicewave.eu/Nessi/Events/ServiceWave2008/tabid/386/default.aspx>

⁽¹⁸⁾ <http://www.cwc oulu.fi/workshops/W-Green2008.pdf>

⁽¹⁹⁾ http://ec.europa.eu/information_society/activities/foi/index_en.htm

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Vision document — 2004

Vision 2020 — Nanoelectronics at the centre of change

<http://www.eniac.eu/web/SRA/e-vision-2020.pdf>

Strategic research agenda — 2007

<http://www.eniac.eu/web/downloads/SRA2007.pdf>

European Nanoelectronics Initiative Advisory Council (ENIAC)

Microelectronics have changed our world drastically: computers, mobile phones, digital television, DVD players, car navigation and security features, medical screening and healthcare equipment have all become essential parts of our everyday lives. The move to nanoscale devices, called nanoelectronics, will further revolutionise applications while demanding increasingly heavy investment in research and production to remain competitive.

Microelectronics underpin almost every single industrial sector. Its value chain currently represents 1 % of global gross domestic product. More generally, the electronics sector receives 30 % of industrial investment in the developed world and results in a global annual market of nearly EUR 800 billion. Taking into account the many other industries that depend on electronics, the global value leverages some EUR 5 000 billion. Electronics also generates highly skilled employment.

ENIAC was established to enable industry, research centres, universities, financial organisations, regional and Member State authorities, and the EU to develop jointly a visionary programme, to foster collaboration and to make the best use of European talent and infrastructures. It aims to strengthen collaborative research and offer a course of action for Europe to achieve world leadership in R & D and maintain high value-added, next-generation production processes in this key sector.

Strategic research agenda

The ENIAC **strategic research agenda** was first published in 2005 and updated in 2006. In 2007, the SRA was completely revised by key European industrial and scientific R & D performers in nanoelectronics. The SRA's objectives are to:

- (1) provide a general framework for the coordination of European research activities at all levels;
- (2) serve the European nanoelectronics value chain — suppliers, producers and users;
- (3) bring together high quality European competences and share critical knowledge, including that of SMEs;
- (4) identify 'disruptive' technologies to overcome roadblocks;
- (5) ensure timely industrial innovation; and
- (6) enhance cooperation between industry and academia, and develop strong cross-Community R & D collaborations for each area.

ENIAC focuses on six main application domains each driven by clearly recognisable economical and social needs, including; health and wellness, mobility and transport, security and safety, energy and the environment, communications, and e-society.

The strategic research agenda (SRA) translates each of these areas into technical requirements, thereby outlining the key challenges and roadblocks to be resolved in order to reach integrated intelligent nanoelectronics solutions. ENIAC recognises six technology domains:

- (1) more Moore: extremely dense, complex digital circuits (compute);
- (2) beyond CMOS: pushing the physical limits of miniaturisation;
- (3) more than Moore: non-digital functions and human interface (interact);
- (4) heterogeneous integration: total system integration ('system-in-package');
- (5) equipment and materials: enables manufacturing of complex technologies;
- (6) design methods and tools: platform-based system design for extremely complex devices.

For all six domains, the research needs until 2020 have been identified and prioritised. The SRA also addresses the need for research infrastructures in nanoelectronics and education and training issues.

Update on platform activities

The operational costs of the platform (Secretariat) during 2007 and in the first quarter of 2008 have been covered by the EUROSANT project. From then on, the activities will be financed by AENEAS, an industrial association established in November 2006 under French law in order to provide a legal backbone to the platform. The association, currently counting more than 75 members, is progressively taking over the activities of the ENIAC European Technology Platform, including the implementation of the strategic research agenda.

The proposal drafted by the platform for a Pan-European Research Infrastructure for NanoStructures (PRINS) and submitted to ESFRI (European Strategy Forum on Research Infrastructure) has been accepted and the PRINS project has started its activities in the first quarter of 2008.

ENIAC has continued its coordination with other platforms, and especially with ARTEMIS, in the field of design automation, and with EPOSS, to better coordinate the development of critical nanoelectronics technologies required for subsystem integration.

ENIAC has been involved in several events. The fourth International Nanotechnology Conference⁽²⁰⁾, aimed at strengthening international cooperation in the field of nanoelectronics and nanotechnology was held in Japan in April 2008. The European Nanoelectronics Forum 2008, former MEDEA+/ENIAC Forum⁽²¹⁾ took place in December 2008.

Selected parts of the strategic research agenda requiring the mobilisation of a critical mass of funds will be implemented through a Joint Technology Initiative (JTI)⁽²²⁾: the ENIAC Joint Undertaking was established in December 2007 by Council Regulation (EC) No 72/2008 of 20 December 2007, with three founding members (the European Community, represented by the Commission, Member States and AENEAS). The first call for proposals of the ENIAC Joint Undertaking was launched in May 2008 and closed on 3 September. A total of around 265 participants from 20 different European countries were involved in the proposals. Selected projects started their work in early 2009.

Next steps

ENIAC, with the support of AENEAS, will continue updating the nanoelectronics SRA, organising networking events and communicating the results achieved within the nanoelectronics JTI.

⁽²⁰⁾ <http://www.inc4.jp>

⁽²¹⁾ <http://www.catrene.org/web/about/presentation.php>

⁽²²⁾ <http://cordis.europa.eu/fp7/jtis>

Launch

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Vision document — 2006

‘Towards a vision of innovative smart systems integration’

http://www.smart-systems-integration.org/public/documents/eposs_publications/060516_Vision_Paper_final_mit_Deckblatt.pdf

Strategic research agenda — 2007

‘Implementing the European research area for smart systems technologies’

http://www.smart-systems-integration.org/public/documents/eposs_publications/EPoSS_SRA_1_3

Strategic Research Agenda – 2009

<http://www.smart-systems-integration.org/public/documents/publications/EPoSS%20Strategic%20Research%20Agenda%202009.pdf>

European Platform on Smart Systems Integration (EPoSS)

The competitiveness of future product generations will be based, to a large extent, on ‘smart integrated systems’, converging a whole range of technologies and improving the characteristics of the entire product in which they are incorporated. These systems are often very complex, networked, energy-autonomous, miniaturised and reliable. Smart systems integration addresses the trend toward miniaturised multifunctional devices and specialised connected and interacting solutions. In this context, the ability to miniaturise and integrate intelligence and new functionalities into conventional and new components and materials at competitive cost, together with the globalisation of markets and the ever faster pace of technological change, are among the most ambitious challenges facing European industry.

New features such as ubiquitous connectivity, security, ease of use and the integration of mechanical, optical or biological properties through different technologies have to be realised. Severe international competition calls for rapid product change, higher quality, lower cost and shorter time-to-market. Becoming smaller and smarter via an interdisciplinary approach will be the key issue in the future, and smart systems technologies and their integration the major challenge.

The evolution of the critical dimension of technologies into the nanometre scale, together with the exploitation of completely new physical phenomena at the atomic and molecular level, has opened opportunities for innovative solutions to old and new issues in bioengineering, environment, human-machine interface, etc. Furthermore, the integration of cognitive functions gives rise to a new concept of converging technologies. The ability to miniaturise and integrate intelligence and novel functionalities into conventional and new components and materials is particularly relevant for the implementation of the vision of ambient intelligence.

Smart systems will redefine human-to-technology interaction: even today, first-generation smart systems (such as object recognition devices, driver status monitoring systems, and multifunctional devices for minimal invasive surgery) give an impression of the enormous application potential. Second-generation smart systems, such as miniaturised artificial organs, advanced energy management systems and environmental sensor networks, will affect nearly all areas of daily life. And, finally, third-generation smart systems will combine technical 'intelligence' and cognitive functions. In the context of the 'Internet of things', they will provide the indispensable interfaces between the virtual and physical worlds.

Smart systems will therefore be crucial for the competitiveness of entire sectors such as aeronautics, automotives, global security, logistics, medical technologies and process engineering. They will also significantly contribute to addressing major socioeconomic problems in the health or environmental domains, e.g. by providing solutions towards assistive living for the disabled and elderly, towards more predictive and preventive medicine, towards assuring the quality of food and water, and also by addressing major environmental challenges.

The market volume of smart systems technologies amounts to some EUR 40 billion as of today and will steadily increase in the coming years. According to the major European industries involved, it will reach a volume of more than EUR 60 billion in the year 2015.

The European Platform on Smart System Integration (EPoSS) brings together the key stakeholders in this area such as industry representatives including SMEs, public and private research organisations, and representatives of the European Commission and the Member States, with the aim of strengthening Europe's capacity to organise and to deliver innovation in the area of smart systems technologies and integration.

Strategic research agenda

The aim of the EPoSS strategic research agenda (SRA), currently under revision, is to show the importance of smart systems and to illustrate their outstanding technical and economic potential. The SRA formulates a shared view of the medium to long-term research needs of the smart systems integration sector.

The sectors which are most relevant for smart systems applications are:

- automotive,
- aeronautics,
- information and telecommunications,
- medical technologies,
- RFID,
- safety and security,
- cross-cutting issues.

The SRA describes for each of these sectors the vision for the specific area, a detailed concept including technological requirements, and, where appropriate, a preliminary roadmap. The SRA constitutes the framework for implementing the EPoSS strategy of industrial research.

The SRA has been updated at the beginning of 2009.

Update on platform activities

The platform currently has 267 members including SMEs, large companies and research institutes. University participation is rather modest.

The structure of the platform has been slightly modified in order to better respond to upcoming research needs. In particular, a new working group on 'Security and industrial safety applications' has been set up. The operational costs of the Secretariat continue to be covered by private resources (contribution from ETP members, not understood as a formal membership fee). Particular tasks going beyond the management of platform activities are partially supported by the EU.

The network of national platforms still needs to be developed (national platforms exist only in two countries), and the Mirror Group has still to be consolidated.

An important recent activity that includes national bodies consists of a memorandum of understanding between German and Italian automotive suppliers on common activities in the area of smart systems for sustainable mobility. The agreement constitutes the basis of working together under national programmes on both sides. The concept will be extended in the coming months by involving further Member States.

In the area of international cooperation, contacts were established with the Japanese programme agency NEDO (New Energy and Industrial Technology Development Organisation)⁽²³⁾. A common perspective consisted of setting up a bilateral lighthouse project on 'Smart systems beyond RFID'.

⁽²³⁾ <http://www.nedo.go.jp/english/index.html>

Cooperation with other platforms, namely with ENIAC, ARTEMIS, Nanomedicine and eMobility, has continued in terms of exchange of positions and definition of boundaries between the different platforms and areas of cooperation.

Together with the ICT ETPs (NESSI, NEM, eMobility and ISI), EPoSS developed a common view on the future Internet including the assessment of the possibility of proposing a public–private partnership.

The implementation of the SRA has continued successfully.

- Twenty proposals were submitted by the ETP or ETP members in 2007 under the seventh framework programme. However, the success rate of the EPoSS-labelled proposals did not exceed the average level (which confirms a general phenomenon).
- A new research infrastructure was established: the Smart Systems Campus Chemnitz, a special research centre at the Chemnitz University of Technology. The institute will be active in the fields of advanced technologies for microelectronics, microsystems and silicon micromachining as well as nanotechnologies⁽²⁴⁾.
- An expert workshop jointly organised by the European Commission and the EPoSS Working Group RFID (involving 80 experts from industry, academia and from public authorities) was held in Brussels on 11 and 12 February 2008 and resulted in the report ‘Internet of things in 2020’, which has been posted on the website and opened to contributions from interested parties⁽²⁵⁾. The document was published as a printed document in September 2008.
- On 26 June 2008, the EPoSS Automotive Group, together with the Information Society and Media DG of the European Commission, carried out an expert workshop on smart systems for the electric vehicle involving 50 experts primarily from industry. A policy paper generated from the expert workshop was circulated to interested public.
- The third European Conference on Smart Systems Integration (SSI 2009) took place on 10 and 11 March 2009⁽²⁶⁾.

Furthermore, the platform has been very active in identifying and responding to training and networking needs via the organisation of approximately 30 events and participation in over 20. Specifically worth mentioning is the EPoSS Annual Forum, which took place in October 2008 in Juan-les-Pins/Antibes (France).

The platform made significant efforts over the past two years to upgrade its official Web portal, with the development of more than 100 pages.

Next steps

- Further develop the basis for a public–private partnership.
- Develop a strategy for, and participate in, the calls for proposals on the development and design of intelligent microsystems for electric vehicles in the FP7 ICT work programme 2009–10.
- Contribute to the development of the ‘Internet of things’.

⁽²⁴⁾ <http://www.zfm.tu-chemnitz.de>

⁽²⁵⁾ http://www.smart-systems-integration.org/public/Internet-of-things/Internet-of-Things_in_2020_EC-EPoSS_Workshop_Report_2008_v1-1.pdf

⁽²⁶⁾ <http://www.mesago.de/de/SSI/main.htm?rw=1>

- Draft a strategy on how to implement better industrial strategic research in FP7, particularly ICT, Objective 3.9.
- Proceed in establishing bi- and multinational initiatives.

Launch

2001

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Vision document — 2006

'Rail 21 Brochure'

<http://www.errac.org>

Strategic research agenda — 2007

Updated 'Strategic rail research agenda 2020'

<http://www.errac.org/docs/SRRA-2007.pdf>

Other related documents published by ERRAC are available (<http://www.errac.org>)

European Rail Research Advisory Council (ERRAC)

Europe's railways provide a vital transport infrastructure supporting Europe's citizens and businesses through passenger travel and the shipment of freight around the continent. However, a large part of the European network is already working to its maximum capacity and customer expectations are increasing in terms of speed, availability, comfort, punctuality, reliability, flexibility and traceability (freight). New technologies are needed in order to meet these demands and further enhance the role that railways play in providing reliable, affordable, safe and environmentally friendly transport for long and short distances.

The European railway and urban mass transit operators generate an annual turnover of around EUR 90 billion with a workforce estimated at 1 000 000 people. In addition, the European rail supply industry employs more than 130 000 people and generates an annual turnover of around EUR 35 billion. European manufacturers have 70 % of the world rail market.

The European Rail Research Advisory Council (ERRAC) is a body set up on the initiative of the European Commission in order to reach consensus on priorities for European railway research and to guide research efforts towards a common strategy. To achieve this ERRAC brings together railway undertakings and infrastructure

companies, public transport operators, the manufacturing industry, and representatives of the EU Member States, European Commission, customer groups, consultants and academic institutions.

Strategic research agenda

The 2020 strategic rail research agenda, which includes a vision for innovations in the European railway industry for the next 20 years, was updated in 2007 and highlights the critical enabling technologies which will need to be developed.

The vision for the future of rail in 2020 aims to increase the railways' role in the European transport system by providing seamless and integrated high-speed passenger services and door-to-door freight services as well as efficient metropolitan and urban mass transport. ERRAC has set out railway business scenarios based on rail doubling its share of both the freight and passenger markets as well as tripling the freight and passenger market volume compared with 2000. The strategic rail research agenda identifies seven priority research areas and the key technologies that have to be developed to turn this vision into reality over the next decade:

- (1) intelligent mobility: a European-wide intelligent infrastructure is needed to support customer information systems to provide compatible technology between Member States and across transport modes;
- (2) energy and environment: new standards and regulations must increase the level of environmental protection while safeguarding commercial competitiveness and offering a systematic approach to noise and vibration;
- (3) personal security (as regards terrorism and the more common problem of vandalism);
- (4) test, homologation and security;
- (5) competitiveness and enabling technologies: improving product attractiveness for customers and reducing life cycle costs through modern technology on all aspects of railway operation including rolling stock, maintenance procedures, ticketing systems and infrastructure;
- (6) strategy and economics: new accounting and planning models will provide a better understanding of the costs of operating and maintaining rail infrastructure and how these costs vary according to changes in the frequency and types of train service;
- (7) infrastructure: cost-efficient maintenance and maintenance-free interoperable infrastructure systems will be developed that yield increases in traffic capacity, loading and track stability.

Update on platform activities

The platform currently counts 46 members, covering all rail stakeholders:

- railway undertakings,
- infrastructure companies,
- urban and regional transport operators,
- manufacturing industry,
- representatives of the EU Member States,
- European Commission,
- customer groups,

- consultants and academic institutions.

Until 2007 the operational costs of platform activities have been partly funded by the EU. Since the beginning of 2008 the Secretariat is temporarily funded entirely by platform members, via contributions in kind.

The structure of the platform has changed slightly, in accordance with the shift of the platform's focus towards the implementation of the strategic research agenda. The platform's work on implementation will develop according to the ERRAC roadmap project. ERRAC roadmap will deliver the roadmaps to guide rail research; these roadmaps will address all relevant issues, stakeholders and themes.

Two existing working groups have been slightly modified.

- The Support Group has been enlarged to an Extended Support Group including the work programme leaders and co-leaders of the ERRAC roadmaps project. Networking has been enhanced, including the linkages to ERA-NETs, to policymakers and to other ETPs and national technology platforms (in particular with ERTRAC, but regular contacts have also taken place with the Czech, Spanish, Dutch, Polish, Swedish and United Kingdom platforms).
- An Evaluation Working Group is in charge of assessing market take-up of rail-related research. In order to avoid duplication, the ERRAC roadmap project aims at setting up a project database.

The UIP and ERFA associations have joined the work of ERRAC in 2008. Moreover, the collaboration with national/regional governments has continued through the participation of Member States representatives in the plenary, a body that can also replace the function of a Mirror Group. Plenary meetings are held twice a year.

Cooperation with other related platforms in terms of exchange of good practices and identification of common priorities has continued throughout 2007, especially with the European Road Transport Research Advisory Council (ERTRAC).

As result of the networking activities carried out by the platform, Austria and Sweden launched a joint call for research, and a Sweden-United Kingdom workshop was organised in order to explore potential areas of cooperation. UIC, UNIFE and the University of Lisbon, all three ERRAC members, are also involved in the GLOBALVIEW SSA, an international cooperation network including in its members India, Russia and South Africa.

The platform has been active in the field of internal/external communication, via the organisation of a number of events:

- plenaries,
- launch of the strategic rail research agenda in 2002 and 2007,
- launch of the Rail 21 Vision in 2006; other publications include 'Suburban and regional railways landscape in Europe', 'Light rail and metro systems in Europe' and 'A comparison of Member State public research programmes with the ERRAC SRRA 2020',
- global-view workshops in India, Russia, and South Africa,
- different conferences EU and worldwide (i.e. the WCRR).

As part of the preliminary implementation of the SRRA four major steps have been taken in 2007:

- the SRRA has been revised to refine the deployment strategy;
- 12 priorities for R & D areas have been proposed for the EU seventh framework programme, first call;
- nine proposals were submitted by the ETP or ETP members, for a total of EUR 17.8 million coming from FP6/7;
- all new European R & D proposals submitted by ERRAC members will have to demonstrate to be effective for the implementation of the SRRA, therefore meeting the market uptake criteria defined by the ERRAC Evaluation Working Group;
- the relationship with EURNEX, the European Rail Research Network of Excellence, has been maintained, although it is not an ERRAC Member.

Finally, in 2007/08 the platform has participated in the following European Commission consultations:

- on the Green Paper on the European research area (ERA) ⁽²⁷⁾;
- on the 2008/09 budget review.

Next steps

ERRAC intends to focus its efforts on:

- producing and approving detailed roadmaps for the correct implementation of the SRRA and addressing technological and political (EU level) challenges;
- continuing and enhancing the market uptake evaluation of past rail R & D projects mainly funded in the FP5 and FP6;
- further collaborating with other European technology platforms;
- working with national technology platforms;
- maintaining ERRAC as the rail advisory body throughout the duration of FP7;
- enhancing cooperation with the EU policymakers;
- monitoring programs and cooperating with relevant international organisations;
- encouraging and nurturing investment in rail research at a private and public level.

⁽²⁷⁾ http://www.errac.org/docs/ERRAC_ERAgreenpaper.pdf

Launch

June 2003

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Vision document — 2004

‘Vision 2020 and challenges’

http://www.ertrac.org/pdf/publications/ertrac_brochure_june2004.pdf

Strategic research agenda — 2004

http://www.ertrac.org/pdf/publications/ertrac_agenda_dec2004.pdf

ERTRAC research framework — 2006

http://www.ertrac.org/pdf/publications/ertrac_RF_brochure_june2006.pdf

European Road Transport Research Advisory Council (ERTRAC)

Road transport plays a vital role in the European economy and society, and has a major impact on the quality of our daily lives, since it is a primary means for accessing our workplace, services and social activities. As such, it creates linkages that are essential for the development of social, regional and economic cohesion in Europe.

It is one of the major sectors of European industry and an important driver for the growth of the European economy, as it represents 11 % of EU GDP and contributes to EUR 33 billion of EU external trade. In particular, the automotive industry directly employs 1.9 million people; indirectly the sector employs 14 million people (10 % of jobs in the EU) ⁽²⁸⁾.

Despite efforts to rationalise the need for transport, growth in the demand for mobility of people and goods is still expected by 2020. About half of this growth is expected to

⁽²⁸⁾ <http://www.ertrac.org/index.htm>

be within the new EU Member States. Developing sustainable and integrated transport solutions and meeting the future energy demand of road transport while reducing its contribution to global greenhouse gas emissions are two of the key challenges that ERTRAC intends to address.

To do this, ERTRAC has involved all the stakeholders in the road transport sector, including end-users, vehicle manufacturers, road infrastructure operators, intelligent transport actors, component suppliers, energy and fuel suppliers, research institutes, cities and regions as well as other public authorities at both European and national level.

Strategic research agenda

Based on the 'Vision 2020', the ERTRAC SRA, published in June 2004 and subsequently extended and detailed through research implementation documents, identifies a number of research targets, including:

- provide the necessary solutions to improve mobility and satisfy the expected 32 % increase in individual demand for travel by 2020;
- enable fluid and efficient movement of an increasing quantity of goods within the overall freight transport system;
- develop a series of robust indicators, such as transport efficiency for passengers and freight, journey time reliability, user service levels and network efficiency, in order to set quantifiable targets in the future.

Due to the complexity of the issues and the number of stakeholders involved with road transport, ERTRAC has structured the discussion and development of the ERTRAC vision for 2020 and the strategic research agenda around four pillars:

- mobility, transport and infrastructure,
- environment, energy and resources,
- safety and security,
- design and production systems.

Each pillar is presented with a logical flow from the vision to the targets for 2020, followed by a detailed description of the research areas that need to be addressed to contribute to a sustainable future road transport system. The current priority areas for activity represent subgroups of these pillars with a focus on:

- urban mobility,
- long-distance transport,
- safety,
- energy and environment.

Update on platform activities

To improve its efficiency and the availability of resources for its further activities, ERTRAC is currently implementing a new structure.

ERTRAC has been very active in supporting the establishment of national platforms, especially in the new Member States (Poland, Slovenia). Moreover, the ERTRAC National Activities Overview has implied a fruitful cooperation with several national governments. The ERTRAC National Activities Overview is a review of road transport

research programmes in 17 European countries, based on information from ERTRAC members as well as from the EC initiatives ERA-NET Transport and EXTR@WEB ⁽²⁹⁾.

In addition, coordination with Member States has continued through the involvement of the Member State representatives directly in the plenary, where they receive first-hand information, as well as through the direct election of a Member State Vice-Chair.

Contacts with other related ETPs, in particular with the European Rail Research Advisory Council (ERRAC), have continued.

In the field of international cooperation, ERTRAC has undertaken a number of specific initiatives, including liaising with the Transportation Research Board of the United States National Academy of Sciences.

In the area of external communication, the platform co-organised the biannual Transport Research Arena Conference in April 2008 in Ljubljana (Slovenia), with the slogan 'Greener, safer and smarter transport for Europe' ⁽³⁰⁾. The conference included a competition (Year 2008 — Young European Arena of Research) through which several young researchers had the opportunity to showcase their work to experts. A second edition of the competition is already planned for 2010 in conjunction with the next Transport Research Arena Conference.

The implementation of the SRA has continued as well as fund-raising activities, including the submission of several project proposals under the first and second calls of the seventh framework programme under the fields 'Intelligent vehicles systems', 'Greening of road transport', 'Mobility of goods and people' and 'Safety and security'.

Next steps

The platform will focus on the definition of its deployment strategy. In parallel, the platform intends to improve its monitoring of research results linked to the platform's SRA. It also aims to strengthen the Secretariat.

Although the overall organisational structure of the platform will remain unchanged, a new working group on ERA (European research area) will be set up. ERTRAC is also considering establishing joint working groups together with other related ETPs (such as the existing Urban Mobility Working Group with ERRAC).

A system of membership fees and the acceptance of both individual and corporate members will be introduced.

Finally, the platform intends to establish closer links with national funding activities (including ERA-NET Transport) and to work on a possible public–private partnership. The feasibility of such an approach will be assessed in 2009.

⁽²⁹⁾ <http://www.transport-era.net>

⁽³⁰⁾ <http://www.tra2008.si/Default.aspx?base>

Launch

March 2004

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Vision document — 2004

‘Vision 2030 — Report of the Group of Personalities’
ftp://ftp.cordis.europa.eu/pub/estep/docs/sra_en.pdf

Strategic research agenda — 2005

ftp://ftp.cordis.europa.eu/pub/coal-steel-rtd/docs/events-infostp_full-report.pdf

Implementation action plan — 2006

‘From a strategic research agenda to implementation’
ftp://ftp.cordis.europa.eu/pub/estep/docs/sra_en.pdf

European Steel Technology Platform (ESTEP)

An economy without steel products is hardly imaginable. Machinery in manufacturing and processing industry, petroleum refineries, and chemical plants for producing basic materials or pharmaceuticals are constructed of steel. Planes, trains, ships, automobiles and many other things needed on a daily basis could not be manufactured unless there were structural parts and components made of steel. Today, the steel sector is under increasing pressure to address a number of challenges like the growing impact of globalisation and worldwide competition, population growth, increased urbanisation, depletion of some natural resources and climate change. To maintain its competitiveness, the European steel industry will have to meet the combined challenging targets of environmental friendliness and economic growth.

Steel is a key sector for Europe’s economy and competitiveness. The EU-27 steel industry has a total annual production of approximately 209 390 00 tonnes and generates more than EUR 100 billion in annual turnover. It provides direct employment for around 350 000 European Union citizens, and several times this

number are employed indirectly in its processing and in the user and recycling industries ⁽³¹⁾.

The European Steel Technology Platform (ESTEP) brings together the whole European steel industry, research centres, universities, the European Commission and Member States, as well as the other European institutions and trade unions. Built on the foundation established by the European research network created by the European Coal and Steel Community (ECSC), its objective is to give new impetus to the full spectrum of European research into steel.

Strategic research agenda

The strategic research agenda offers a global vision on the innovation and R & D initiatives that will lead to sustainable leadership of the steel sector in the coming decades. The objectives are developed around the four pillars of sustainable development:

- profit (competitiveness through innovation: competitive steel production and competitive steel applications);
- planet (sustainability: drastically reduced CO₂ emissions and energy saving with 21st-century processes and products);
- partners (steel solutions: meeting customers' future needs and improving citizens' quality of life);
- people (working together: innovating within the industry, with our partners and with our workforce).

To meet the above set of objectives, the platform decided to launch a structured long-term R & D action by developing three large and complementary R & D industrial programmes with large societal impacts, each of them encompassing several R & D themes and research areas, e.g. for the process programmes:

- scale-free processes,
- intelligent manufacturing,
- the greenhouse gas challenge,
- energy effectiveness and sustainable use of resources,
- societal value of materials.

The platform intends also to support the development of efficient steel solutions through multi-sectoral projects for the automobile, construction and energy sectors.

Furthermore, a horizontal activity regarding human resources was added to focus on attracting and securing qualified people to help meeting the steel sector's ambition.

Update on platform activities

The structure of the platform went through some changes during the past year. Several subgroups were added to deal with the increase in working group activities under the 'people' pillar of the strategic research agenda. Moreover, a communication task force was established.

⁽³¹⁾ <http://www.eurofer.org>

Contacts with other ETPs in terms of exchange of good practices and identification of common priorities have continued. In particular, the European Steel TP has cooperated with other platforms operating in the construction and energy areas (e.g. Hydrogen and Fuel Cell, Sustainable Chemistry and European Construction TPs) through the creation of an inter-platform working group on energy efficient buildings. This collaboration has led to a common proposal for a lead market pilot action on 'Sustainable construction' ⁽³²⁾. New cooperation is just starting with TP Wind and other related ETPs on the so-called third industrial revolution (i.e. shift towards new sources of energy) ⁽³³⁾, and with ZEP (Zero Emissions Platform) on carbon capture and storage.

The European Steel TP participates in the initiative 'ULCOS' (Ultra-Low CO₂ Steelmaking), to develop a breakthrough steel-making process aimed at drastically reducing greenhouse gas emissions beyond 2020. This project, carried out by a consortium of 48 European partners, completed its first phase successfully in 2006, with the identification of four technologies selected for further investigation.

The platform is also involved in a newly created international network, called SOVAMAT (Social Value of Materials). The network, bringing together 80 participants, was established to discuss the new tools needed for developing new materials — among them steel — that society and the economy will need in the future. The first yearly meeting of the network was held in March 2007.

The Steel Technology Platform played a fundamental role in setting up a European steel industry/university network to identify and develop the new skills that are necessary to develop breakthrough technologies needed to implement a sustainable approach of the platform, particularly in connection with climate change. The first meeting, which took place in Warsaw in April 2007, resulted in two main outcomes:

- an agreement to create a European high education and training school for steel-related matters (ENTRANCE);
- a wish to support the establishment of a steel sector-related Knowledge and Innovation Community (KIC) within the European Institute of Technology.

The implementation of the SRA is progressing. Under the Research Fund for Coal and Steel (RFCS) programme 24 proposals covering both process and products activities were retained in the 2007 call ⁽³⁴⁾. Nevertheless, so far only one proposal has been retained under the seventh framework programme.

Next steps

The Steel Technology Platform will focus its efforts on:

- implementing the existing network ENTRANCE via a virtual school;
- implementing the SOVAMAT programme;
- implementing the ULCOS II demonstration programme — during the second phase, which will last five years, the technologies selected will be tested at a significant scale and evaluated from a technological, economical and environmental point of view;

⁽³²⁾ http://ec.europa.eu/enterprise/leadmarket/sustainable_construction.htm

⁽³³⁾ <http://www.euractiv.com/en/energy/interview-third-industrial-revolution-nigh/article-170003>

⁽³⁴⁾ http://ec.europa.eu/research/conferences/2007/energy_infoday/pdf/rfcs_presentation_andrieu_en.pdf

- publishing four roadmaps, currently work in progress.

Launch

2005

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Strategic research agenda — 2006

http://estp.esa.int/upload/ESTP_SRA_1.0-July2006.pdf

European Space Technology Platform (ESTP)

Satellites around the globe send images of rain and windstorms heading our way, television news is beamed around the world by satellites, and we are guided to restaurants and theatres by satellite navigation. Europe is increasingly depending on space systems for many applications of daily use and others of high-strategic value. Challenges of the sector include dependence on others for some critical space components, gaps in its development of future technologies and a limited commitment to security-related space activities.

The European Space Policy Institute (ESPI) estimates the value of the civil and military worldwide space sector at USD 185 billion in 2007, up from USD 177 billion in 2006. This figure includes services and applications and both institutional and commercial markets with a share of, respectively, 38 % and 62 %. The majority of the commercial value is generated by services and applications made possible by relatively modest investments in space infrastructure, like in the commercial area direct-to-home television (DTH). Worldwide, about 48 % of the worldwide institutional space budget goes to civil applications and 52 % to military/intelligence programmes.

The space sector is a significant source of high quality European employment — providing in 2007 more than 33 000 jobs — and, despite the relative low investment in space, European space industry is highly competitive. Europe won almost 40 % of all commercial GEO communication satellite contracts placed in 2007.

Regarding institutional budgets (including both civil and military spending), Europe keeps its position as the world second largest space power, with 14 % of the institutional market, compared with 74 % in the United States and 3 % in Japan.

However the spending of China, India and Russia had been increasing considerably in the last years. As regards military and intelligence budgets, ESPI estimates the United States' spending at USD 35.5 billion, which would be around 95 % of global spending in this field. Considering that the same technology is, in the vast majority of cases, suitable both for civil and military space applications (dual-use), the support to space technology in Europe is just a tiny fraction of that in the United States. For 2007, Eurospace estimated that the turnover of the European space industry on military space programmes reached EUR 1 billion.

The European Space Technology Platform (ESTP) brings together the main EU space stakeholders including the European Space Agency (ESA), national agencies, industry, and research organisations. Its main objective is to reinforce the coordination and planning of European research efforts (based on the European Space Technology Harmonisation/ESTMP process) to establish a sound, competitive and non-dependent space technology base, supporting EU policies and enabling services to the citizen.

Strategic research agenda

The ESTP strategic research agenda (SRA) is based on the earlier efforts by ESA, Member States and industry to optimise public investment in space technology R & D, fill strategic gaps and reduce unnecessary duplication. These efforts (launched in 2000), known as the European Space Technology Harmonisation/ESTMP (European Space Technology Master Plan) process, are one of the main underpinning elements of the ESTP SRA.

The European space technology strategy is aimed at pursuing five main top-level objectives:

- (a) prepare and enable future European space programmes and ensure coherence of technology developments schedule (ad hoc maturity level) for maximum use by projects in different fields of science and applications (e.g. science, earth observation and exploration);
- (b) foster innovation in architectures of space systems, identification of disruptive technologies, developments of new concepts;
- (c) support competitiveness of industry in the European institutional markets and in the global commercial markets, while ensuring a balanced participation of all stakeholders;
- (d) ensure European technology non-dependence and the availability of European sources for critical technologies;
- (e) leverage on technological progresses and innovations, outside the space sector to use and adapt them to design new space systems (spin-in); foster technology transfer for space to non-space applications (spin-off).

These objectives will be achieved via research efforts under three strategic pillars:

- **pillar 1: non-dependence** — development of strategic space technologies needed for Europe's non-dependence;
- **pillar 2: multiple-use and spin-in** — synergic actions with the non-space sector in areas of mutual interest (e.g. embedded systems, photovoltaics, fuel cells, nanotechnologies and robotics);

- **pillar 3: enabling technologies** — support the implementation of EU policies by developing needed technology (e.g. in the area of security/defence).

Update on platform activities

Over the past year, the overall organisational structure of the platform has not changed. Nevertheless, in 2007 special agreements were made regarding the relationship between the European Space Agency and the European Commission for Space Technology. The activities of the Secretariat continue to be self-funded.

Although no specific network of national platforms exists, with the exception of a national platform in Poland, the number of EU and ESA Member States represented in the platform is considerable (21) and meetings with national delegates for space technology are held on a quarterly basis in the context of the European Space Technology Harmonisation Process.

Contacts with other ETPs have taken place (Robotics, EuMat, Hydrogen, Photovoltaics). ESTP collaborates in particular with the Integral Satcom Initiative (ISI) ETP; during 2006 both platforms agreed that coordination and synergy are key ingredients for achieving significant results for the European space industry.

In the area of international cooperation, contacts with Russia were established in the frame of the Working Group on Technology and Applied Sciences under the 'EU-Russia Dialogue on Space Cooperation' (three meetings held in 2008).

In the field of internal/external communication and in the context of the European Space Technology Harmonisation, a number of initiatives were carried out in 2008.

- mapping meetings with industry, national delegates and ESA covering several topics, for example:
 - power management and distribution,
 - hold down, release and separation mechanism,
 - optical communication,
 - technologies for optical passive instruments,
 - chemical propulsion,
 - micro-nanotechnologies.
- Joint EC-ESA-EDA Workshop on Critical Technologies for European Strategic Non-Dependence on 9 September 2008 and attended by more than 100 participants from more than 20 countries.

The implementation of the SRA continued.

- The priorities recommended in the ESTP strategic research agenda, followed up by extensive coordination with the EC in the third and fourth quarters of 2006, were fully reflected in the work programme 2007 in the theme space technology.
- Several proposals were submitted by ETP members in 2007 under national and ESA programmes and the EU framework programme.
- The analysis of the results of the FP7 2007–08 call for proposals 'Strengthening of space foundations' has shown that the quality of submitted

proposals was quite encouraging. Of the 52 proposals received, 35 were evaluated above threshold, although only the first 11 projects obtained EU funding. Amongst these 11 projects, only one was on space technologies (the others being on the other topics of the call — space science and space transportation). Since space technologies are critical for European non-dependence, the FP7 Space Committee has decided to earmark an amount of EUR 9 million dedicated solely to space technologies for non-dependence among the EUR 14 million of the second call.

Next steps

- Publication of the European Space Technology Master Plan ESTMP 2008.
- Evaluation of the results of the second FP7 space call.
- Ongoing efforts in the framework of the European Space Technology Harmonisation Process.

Launch

2005

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Vision document — 2005

<http://www.industrialsafety-tp.org/downloads.aspx>

Strategic research agenda — 2006 (under revision)

<http://www.industrialsafety-tp.org/downloads.aspx>

European Technology Platform on Industrial Safety (ETPIS)

According to the European Agency for Safety and Health at Work, every three and a half minutes somebody in the EU dies from work-related causes. Of the 150 000 deaths per year, the vast majority are caused by occupational diseases (142 000), while the rest are classified as work-related accidents. Although there has been a marked decrease in the number of serious and fatal accidents over the past few years (of respectively 21 % and 24 % between 1998 and 2004 in the EU-25), there are still far too many people suffering accidents at work.

The Major Accident Reporting System of the European Commission records that approximately 30 major accidents happen each year within the industry sectors covered by the Seveso II directive. By definition these accidents have the potential for major consequences to people and the environment. They disrupt the process of sustainable industrial development, directly through the remedial and prevention activity and indirectly through restrictions placed on the whole industry as a result of these failures.

In addition, new industrial technologies bring new safety challenges that need to be addressed at an early stage of the design: e.g. the development of nanotechnologies, the extensive use of new energy carriers such as hydrogen or biofuels, etc. They require expertise in risk assessment and management, and knowledge of hazardous

phenomena as well as about the technical and organisational measures needed to control the risk.

Although many of the most respected risk assessment and control methodologies (such as the Hazard and Operability Study (HAZOP) and the Quantitative Risk Assessment (QRA)) have originated from or have been developed in Europe, there is a lack of formal coordination and targeted resource funding.

The European Technology Platform on Industrial Safety (ETPIS) has brought together all relevant stakeholders (i.e. from industry, unions, authorities, NGOs, banks, insurance and research) to further improve industrial safety and thus the competitiveness of the European industry, by supporting safe technological innovation and exploiting/implementing results of research and innovative methods within industry.

Strategic research agenda

The SRA focuses on five major challenges:

- improving methods and technologies to reduce risks at work and to prevent major accidents;
- developing new risk assessment and risk management methods addressing the complexity of industrial systems;
- understanding the impact of human and organisational factors on risk control;
- understanding emergent risks and cross-cutting risk and safety issues;
- improving structural safety for critical infrastructures.

The process of revision and updating of the SRA is currently ongoing and is largely guided by a number of research hubs (i.e. topic-based groups of stakeholders aiming, firstly, at defining a research agenda that is specific to their topic of interest and, secondly, at exchanging knowledge and starting projects).

The research hubs address the following issues:

- gaining knowledge for risk management of industrial processes involving nanoparticles;
- improving knowledge transfer to industry and in particular SMEs, education and training activities;
- improving safety for transportation of hazardous goods;
- coordinating the use of research infrastructures to perform experiments related to safety and security.

Update on platform activities

The structure of the platform has seen many changes over the past year.

- New research hubs were set up in response to the wishes expressed by the members, including large-scale infrastructures for testing and transportation of hazardous goods.
- The Executive Board, composed of six persons, was elected directly by all members of the platform. As first priorities, the Executive Board will supervise the creation of a High Level Group, the establishment of a membership fee

and the coordination of the national platforms. The scientific coordination and consolidation of the links with other ETPs remain also key priorities.

- The terms of reference for the European Technology Platform on Industrial Safety and its Mirror Group have been discussed and updated during the yearly General Assembly, which took place in April 2008.

Cooperation with Member States has continued through the work of the Mirror Group, which held its second meeting, in March 2008, in Brussels. On that occasion the representatives of Member States were informed about the activities of the platform and the projects financed by FP7. The cooperation with national and regional governments has led to the definition of national work programmes based on the strategic research agenda and the organisation of joint events.

The platform has cooperated extensively with the Future Textile and Clothing ETP and organised a brokerage event (on the topic of reducing the risk of injury in complex systems through advanced personal protective equipment) in view of presenting a joint proposal under FP7. There is ongoing collaboration with other platforms (such as SusChem, Construction, EUMaT, *Manufuture*, Biofuels, and Steel).

Other brokerage events were organised in 2007 to facilitate the presentation and subsequent launch of five projects on industrial technologies, including nanotechnologies, under FP7. At national level, 15 other projects were launched.

ETPIS has been particularly active in the field of international cooperation:

- presenting a COST (cooperation in the field of scientific and technical research) proposal ⁽³⁵⁾;
- participating in the Intelligent Manufacturing System (IMS) Initiative ⁽³⁶⁾;
- collaborating with key European scientific associations related to risk and safety, including the Society for Risk Analysis (SRA) and the European Safety and Reliability Association (ESRA);
- starting a partnership with several clusters and *pôles de compétitivité*.

A two-day seminar was held in Berlin in January 2008 with the title 'Implementing the strategic research agenda of the European Technology Platform on Industrial Safety'. The seminar allowed the focus groups to update the strategic research agenda and discuss the development of a vision regarding the use of research infrastructures for safety and security.

Nine national platforms have been created (Czech Republic, Germany, Greece, Spain, France, Italy, Poland, Romania, and Finland) and four are under construction (Lithuania, Austria, Portugal, and Slovenia). A meeting was held in June 2007 to elaborate a common vision and identify the priorities for coordinated actions. In September 2008, the second meeting of the national platforms focused on the development of common activities and launch of specific initiatives.

Next steps

⁽³⁵⁾ <http://www.cost.esf.org>

⁽³⁶⁾ <http://cordis.europa.eu/ims/home.html>

The European Technology Platform on Industrial Safety will change its organisational structure; in particular it will create a High Level Group and introduce a membership fee for financing part of its operational costs. It will continue to promote the coordination of its activities through national platforms, through its Mirror Group and preparing an ERA-NET Plus as follow up of the ongoing ERA-NET NEW OSH ERA ⁽³⁷⁾.

Furthermore, the platform will focus on the involvement of SMEs by working in partnership with the regional clusters and *pôles de compétitivité*. It will also focus on improved communication between members.

Finally, it will complete the revision of its strategic research agenda and present it in 2009.

⁽³⁷⁾ <http://www.newoshera.eu/newoshera/about/NEWOSHERAleaflet.pdf>

Launch

2006

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Vision document — 2006

‘Roadmap of the European Technology Platform for Advanced Engineering Materials and Technologies’

<http://www.eumat.org>

Strategic research agenda — 2006

Part 2 of the ‘EuMaT roadmap’

<http://www.eumat.org>

Advanced Engineering Materials and Technologies (EuMat)

Materials are everywhere; they make modern life possible and constitute the basis of the welfare of mankind. Today, the advanced engineering materials and technologies industry faces a number of important challenges including environmental legislation, recycling requirements and increasing costs of energy and commodity raw materials. There is a trend to shift production to low labour-cost countries, combined with a rapidly developing technological competence in those countries.

Given the wide-ranging nature of the sector, it is difficult to provide accurate information about its market size; but preliminary estimates, based on studies carried out in the nineties, indicate that the market for advanced materials is around EUR 40 billion per year with an annual growth rate of 18 % compared with a growth rate of only 3 % for conventional materials ⁽³⁸⁾.

The Advanced Engineering Materials and Technologies Technology Platform (EuMaT) was launched to ensure optimal involvement of industry and other important

⁽³⁸⁾ <http://www.eumat.org>

stakeholders in the process of establishing R & D needs and priorities in the area of advanced engineering materials and technologies. The EuMaT Technology Platform brings together participants from different disciplines, including industry, public authorities, the academic community, consortia from other EU projects, the financial community and civil society, including users and consumers.

Strategic research agenda

The purpose of the strategic research agenda (SRA) is to provide a basis for the identification of the need for research and development on advanced engineering materials and technologies, focused on a set of five priority research areas:

- multifunctional engineering materials with gradient properties;
- engineering materials for challenging application conditions;
- multi-material (hybrid) systems where advanced materials are combined with more conventional/structural materials;
- related production technologies; and
- multi-scale modelling.

There are detailed research and technology priorities for the short, medium and long-term future.

Short term (2–5 years):

- (a) develop total life cycle material design concepts using selected case studies from industry;
- (b) develop further the next generation of tailored materials and tailored material solutions;
- (c) develop sufficient mechanical reliability technology based on industrial needs;
- (d) initiate research and technology development for industrially most attractive new spearhead material groups;
- (e) initiate development of selected new key manufacturing technologies that would create a long-term competitive edge for European manufacturing industry;
- (f) initiate work for development of reliable, scientifically and industrially viable modelling and simulation technology for materials and manufacturing engineering.

Medium term (5–10 years):

- (a) create first industrial life cycle cost based solutions utilising development of material understanding and manufacturing methods;
- (b) take into industrial use the developed new manufacturing technologies;
- (c) take into industrial use developed new modelling and simulation methods and related design methods.

Long term (10–20 years):

- (a) create first industrial applications and products of developed new materials systems and related manufacturing technologies;
- (b) take into full industrial use developed product life cycle design methods.

Update on platform activities

The total number of registered members has continued to grow and the platform currently counts more than 800 members, with almost 23 % coming from industry (both large companies and SMEs), 45 % from national research institutes and 23 % from academia.

At the same time, the structure of the platform was expanded with the creation of four new working groups: materials for energy, modelling and multi-scale; nanomaterials and nano-assembled materials; knowledge-based multifunctional materials; and materials for extreme conditions. The different working groups are active, organising ad hoc meetings to develop project ideas.

The platform continued its cooperation with other ETPs that deal with materials/technologies through:

- participating with the European Steel Technology Platform in a joint meeting with the European Commission on the project Social Value for Materials (SOVAMAT) and in the Steelmaking Conference 'Stahl 2007';
- reaching a collaboration agreement with the Sustainable Chemistry Platform;
- submitting a joint proposal with the Industrial Safety Platform and the Manufacturing Technologies Platform under the seventh framework programme;
- taking part in the two big workshops under the European cooperation in the field of scientific research (COST) programme ⁽³⁹⁾.

In addition to formal links already in place with a number of national materials institutes, a new connection was established with the United Kingdom Institute of Materials, Minerals and Mining, founded by the United Kingdom government. Links with national platforms on materials in Spain, Poland, Portugal and the United Kingdom were established, thanks to the activity of the Steering Committee.

In February 2007, EuMaT organised a general information meeting on the seventh framework programme, focused in particular on project opportunities in the broad area of material science and engineering. One of the main objectives was also to encourage potential applicants to present and discuss the objectives, scope and structure of planned proposals.

In January 2008 the EuMaT Energy Materials Working Group organised a workshop to facilitate the development of proposals in Energy Materials under the seventh framework programme. The aim of the workshop was to bring together European industries, research organisations and universities to identify topics for possible proposals for the energy and materials areas of the FP7 programme.

EuMaT participates in the scheduled seminar with the industrial leaders of European technology platforms which brings together ETPs and the Commission for a continuous dialog on ETPs policies.

Next steps

⁽³⁹⁾ <http://www.cost.esf.org>

First of all, the platform intends to update its SRA with input from all Steering Committee members, with the aim of having a final version in the course of 2009.

EuMaT has also started to define the key R & D programmes within the various working groups.

Regarding funding, the platform will continue to look at options to fund the activities of its various structures such as the Secretariat, Steering Committee and working groups, for example via the use of public-private-partnership schemes.

The platform will continue to organise brokerage events for its members and to intensify contacts with other technology platforms.

Launch

October 2005

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Vision document

EUROP, the European Robotics Platform — Glossy Brochure (2005)

<http://www.robotics-platform.eu/documents.htm>

Strategic research agenda

July 2009

<http://www.robotics-platform.eu/cms/index.php?idcat=8>

European Technology Platform on Robotics (EUROP)

The European Technology Platform on Robotics aims to mobilise all the stakeholders in the field, including the robotics industry, researchers and private and public investors, in order to maintain Europe's leading position in industrial robotics and to extend it to new applications (professional service, domestic service, security and space robotics).

Industrial robots form an essential part of the industrial manufacturing backbone of Europe. Without the use of robots, cost-effective and high quality production would not be possible in Europe because of its high labour-costs in comparison to many parts of the world. In the future, the shortage of skilled labourers, a need for an increase of productivity and technological advances will lead to rising demand for industrial robot applications. Furthermore, the need to cope with an ageing population, the increased workload resulting from extended monitoring of our everyday environment and the necessity to operate in domains which are either inaccessible or very dangerous to people mean that there are many opportunities to increase the use of robotics beyond its current applications. To do so successfully, continuing and increased public and private investment is required. The current

R & D fragmentation and the long time required to turn robotics research results into innovative products needs to be addressed through collaboration across all five market domains (industrial, professional service, domestic service, security, and space robotics) and increased cooperation between the academic and industrial players.

The current global market for industrial robot units is estimated at around USD 5.8 billion and the market for industrial robot systems at USD 17 billion per year. This market is projected to increase at a rate of 4.2 % per year up to 2010. Currently about one million industrial robot units are in operation and approximately 120 000 units are sold each year (worldwide). Europe has a globally successful industrial robotics industry, with more than 35 000 new installations each year. As regards service robots, predicted sales between 2007 and 2010 are up to USD 8.2 billion per year. Today about 40 000 professional service robots and 3.5 million domestic service robots are in operation worldwide. Up to the end of 2007 about 5.5 million units of service robots were sold, and at least 12.2 million are expected to be sold between 2008 and 2011 ⁽⁴⁰⁾.

Strategic research agenda

Based on a first version of the strategic research agenda (SRA) developed by EUROP in 2006, the 2009 version of the SRA has been developed through the coordination action for robotics in Europe (CARE ⁽⁴¹⁾), a project funded under the sixth framework programme. The objective of CARE is to identify research priorities and to update the SRA for robotics in Europe.

The new SRA is based on a number of product visions, outlining how robots may be used in the future. There are six application scenarios: manipulation robots, robotic co-workers, logistics robots, security robots, robots used for exploration or inspection, and edutainment. The SRA outlines common application requirements and the core technologies which will help to fulfil these requirements.

The SRA aims at increasing dialogue between all stakeholders in the field of robotics, and at guiding and aligning research priorities in robotics both nationally and on a European scale.

Update on platform activities

A **membership qualification process** was initiated in September 2007, which has since led to the registration of nearly 100 dedicated members (approximately half industrial and half academic, distributed over 19 Member States). EUROP members are usually small companies (typically less than 20 people dealing with robotics, e.g. in research institutes, laboratories, start-up service robotics companies, and security robotics industries), but there are also five bigger players involved (ABB, Comau, Güdel, KUKA and Reis), each with more than 250 robotics-related staff.

A **new governance structure** was approved at the EUROP members' assembly in October 2008. The Board of Stakeholders is the main decision-making body of the

⁽⁴⁰⁾ World Robotics 2007, published by the IFR Statistical Department (<http://www.worldrobotics.org>)

⁽⁴¹⁾ <http://www.robotics-care.eu>

platform. Its activities include defining, pursuing and implementing the platform objectives and empowering the Executive Board, which is the main managing body of the platform. The Executive Board consists of the EUROP chair, the working group chairs, an SME representative and the Secretariat. It is responsible for coordinating and executing platform operations as well as representing EUROP externally.

The working groups are the centres of collaborative activities within the platform, discussing and defining R & D interests and technology priorities. In addition to the thematic working groups, a working group called 'Technical Advisory Group' was established to identify technical application requirements common to all robotics domains.

The main activity over 2008 has been the ongoing **revision of the SRA**, through extensive consultation with the stakeholders and conducted by the CARE project. Through several consensus meetings, and through discussions with experts external to the project, the most significant robotics players from industry, research institutes and professional organisations have been involved. The EUROP and academic networks played a significant role in this process. The presentation of the final version of the strategic research agenda will take place on 7 July 2009.

Next steps

The platform will focus on the further development of the SRA in the context of the CARE project and intensify ETP activities after the restructuring process. As decided at the EUROP members' assembly in April 2008, EUROP will focus its future work on the following three main goals:

- providing networking support for the European robotics community;
- developing the strategic research agenda of European robotics;
- promoting European robotics.

Furthermore, EUROP intends to improve its linkages with national initiatives (making the most out of its Mirror Group) and other related ETPs (such as *Manufuture*, ARTEMIS and ENIAC). The platform will continue looking for a funding structure for its operations, for example via membership fees and/or contributions from a funding body.

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2005

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Vision document — 2005

‘European Technology Platform on Food for Life — The vision for 2020 and beyond’

<http://etp.ciaa.be/documents/BAT%20Brochure%20ETP.pdf>

Strategic research agenda — 2007

‘European Technology Platform on Food for Life — Strategic research agenda 2007–20’

http://etp.ciaa.be/documents/CIAA-ETP%20broch_LR.pdf

Implementation action plan - 2008

http://etp.ciaa.eu/documents/Broch%20ETP_IAPlan_1.pdf

Layman’s version of vision and SRA, May 2008

http://etp.ciaa.eu/documents/CIAA_Booklet%20ETP_final.pdf

Food for Life (Food)

Manufactured foods are safer than ever, but excessive food intake and a decrease in physical activity have led to a significant growth of lifestyle-related diseases in European society. Obesity, coronary and heart diseases, diabetes, etc. will increase to unacceptable levels if appropriate measures are not taken immediately. The European agro-food industry is aware of its role in the prevention of lifestyle-related diseases. However, this comprehensive area requires completely new and innovative concepts, which cannot be introduced and exploited without substantial and targeted R & D investments.

The food and drink industry is the largest manufacturing sector in Europe. It is made up of about 309 000 companies, over 90 % of which are SMEs, and provides jobs for 4.3 million people. With a turnover of around EUR 870 billion, the European agro-food industry is a leading global exporter. It provides significant added value and

offers scope for growth within new EU Member States, development of regional economies and exploitation of cultural diversity and tradition. The European agro-food industry is thus central to the wider economic development of Europe ⁽⁴²⁾.

Gathering the food sector's private and public stakeholders, Food for Life promotes research on new products and production processes related to food, health, food quality and safety as well as sustainable production and food-chain management.

Food for Life supports the development of novel and improved food products by studying the links between diet and brain activity, immune and intestinal functions and metabolic function. It also seeks to identify ways of building consumer trust in the food chain through up-front design and by the identification and promotion of best practices in sustainable food production.

Strategic research agenda

The Food for Life strategic research agenda (SRA) describes the priority themes for research, communication, training and knowledge transfer that are considered necessary to stimulate and underpin innovation in the European food and drink sector.

The SRA identifies a number of key challenges, which are defined across six interacting areas:

- ensuring that the healthy choice is the easy choice for consumers;
- delivering a healthier diet;
- developing quality food products;
- assuring safe foods that consumers can trust;
- achieving sustainable food production;
- managing the food chain.

Successful implementation of the SRA will require further prioritisation according to:

- the importance of the societal challenge;
- the economic impact; and
- the need for a major, long-term investment in multidisciplinary, multinational knowledge generation and dissemination.

When these criteria are applied, three key thrusts emerge; these involve research that will lead to improved competitiveness of the agro-food industry by developing new processes, products and tools that:

- (a) improving health, well-being and longevity;
- (b) building consumer trust in the food chain; and
- (c) supporting sustainable and ethical production.

Update on platform activities

Over the past few years, the number of platform members has increased continuously. Currently the platform has 113 members, half of them coming from research institutes. Regarding its structure, the platform underwent minor changes,

⁽⁴²⁾ [http://etp.ciaa.be/documents/BAT %20Brochure %20ETP.pdf](http://etp.ciaa.be/documents/BAT%20Brochure%20ETP.pdf)
CIAA Annual Report 2007 ([http://www.ciaa.be/documents/brochures/CIAA %20RA_UK_LR.pdf](http://www.ciaa.be/documents/brochures/CIAA%20RA_UK_LR.pdf))

aimed at being able to better respond to upcoming research needs. In particular, the composition of the board and of the working groups was modified to facilitate members' participation. The operational costs of the platform continue to be funded by the EUFOOD4LIFE project under the sixth framework programme, and partly by the Confederation of the Food and Drink Industries of the EU (CIAA).

The platform has encouraged and supported the establishment and the related work of national platforms. National branches already exist in 18 countries and 11 more are being established.

A Mirror Group was created and held its first meeting in June 2008. The Group, at the moment representing eight Member States, is intended to include representatives of national funding agencies, ERA-NETs, COST, EUREKA and other bodies funding agro-food research, training activities and innovation.

The ETP has closely interacted with related platforms in the KBBE (Knowledge-Based Bio-Economy) network, specifically with Plants for the Future, Global Animal Health and SusChem. This cooperation resulted in the submission of a joint project proposal under the seventh framework programme (Cooperation, Theme 'Food, Agriculture and Fisheries, and Biotechnology').

In the area of international cooperation, the ETP has reinforced its liaison with New Zealand and Russia and is in the course of establishing new contacts with Australia, India and South America.

The platform has been very active in the field of internal/external communication, through the organisation of a number of events.

- Four meetings of the national platforms and two meetings of the Mirror Group (national funding agencies).
- A workshop was organised in conjunction with the Alimentary Pharmabiotic Centre and the Irish National Platform in Cork in February 2008 ⁽⁴³⁾.
- The third stakeholder meeting was held in June 2008.
- The final version of the implementation action plan was launched in October 2008.

During the third stakeholder meeting, the Food for Life ETP presented the revised implementation action plan (IAP), after extensive stakeholder consultations. The implementation action plan explains how the research priorities that were identified in the strategic research agenda (SRA) of the ETP Food for Life, published in September 2007, can be implemented most effectively.

The IAP identified a number of specific activities, including:

- formation of ERA-NETs on 'Food and health' and 'Sustainable food production/Food chain management';
- development of a lead market action proposal within the field of food and health;
- stimulation of public-private partnerships and specific Eureka themes;

⁽⁴³⁾ http://etp.ciaa.be/asp/news_events/detailed_doc.asp?doc_id=174&cat=news

- identification of other funding opportunities (COST, European Institute of Technology, European Investment Bank, Venture Capital).

It also addressed the extent to which the priority research activities, as proposed by the ETP, require additional resources, new instruments for funding, complementary activities in education and training, and other actions that are necessary for transferring new or existing knowledge into innovation and social benefit.

Furthermore, as part of its deployment strategy, the ETP has contributed to:

- developing a research project database, containing completed and ongoing European and transnational research projects related to the ETP 'Food for life' challenges ⁽⁴⁴⁾.
- supporting the submission of an infrastructure proposal called 'Integrated European Nutrition Centre', through the following activities:
 - opening and optimising the access to and the use of the existing nutrition/nutrigenomics facilities;
 - network: protocols, procedures and formats, databases, data sharing, evaluation tool book and training;
 - access and services: functional analysis and imaging, biomarkers, food composition and intake, etc.

Next steps

Over the coming period the platform aims to reach the following objectives:

- reorganise the platform to work on the deployment strategy to achieve the implementation plan;
- propose a lead market action in food and health.

⁽⁴⁴⁾ http://etp.ciaa.eu/asp/projects_inventory/search_area.asp

Launch

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Vision document — 2004

http://textile-platform.eu/textile-platform/?block %5B47 %5D %5Bsubdir %5D=Keydocuments&page_name=Downloads

Strategic research agenda — 2006

'The future is ...textiles'

http://textile-platform.eu/textile-platform/?block %5B47 %5D %5Bsubdir %5D=Keydocuments&page_name=Downloads

Future Textiles and Clothing (FTC)

Fibre and textile-based materials and products have always played a vital role in human life and there is no reason to believe that their importance will diminish in the 21st century. With a growing world population and a rapid increase in textile consumption in developing countries, a whole range of new application areas for textiles and constantly rising user requirements (in terms of functionality, variety, precision, performance, reliability, user and environmental friendliness of textile products, textile production in both volume and value) is set to rise.

This will bring opportunities to the European textile and clothing industry, especially in the highest quality and most innovative product categories, which can only be harnessed by building on Europe's existing strengths: innovation and quality

leadership, creativity and scientific excellence, diversified industrial capacities and corresponding skills and partnerships with leading supplier and customer sectors.

With an apparel consumption of at least EUR 15 billion, the EU-27 is the largest world market for textile and clothing products. The European textiles and clothing industry is the world's second exporter of textiles and the third for clothing. Its annual turnover is EUR 207 billion and its 170 000 companies employ 2.7 million workers ⁽⁴⁵⁾.

The aim of the Future Textiles and Clothing ETP is to develop a long-term vision for the transformation of today's European textiles and clothing industry into a sustainable and global industrial player, focusing on the effective exploitation of research and innovation in all textiles and clothing sub-sector activities and overcoming the existing fragmentation of textile clothing RTD activities in Europe.

The major stakeholders of the European Technology Platform for the Future of Textiles and Clothing are the European textile and clothing industry (in which 96 % of companies are SMEs) and its research community, mainly composed of public and private research institutes and university research departments. Nevertheless, FTC welcomes all individuals or organisations that can demonstrate interest, competences and expertise to meaningfully contribute to its activities.

Strategic research agenda

The strategic research agenda was developed by means of a collective scenario development and technology road-mapping exercise carried out during the 2005 and early 2006 by more than 400 individual experts representing all involved stakeholder groups. The document highlights major areas for innovation and identifies crucial research priorities to be tackled based on three major focus areas, namely:

- 'From commodities towards specialties', for which the key research priorities identified include new speciality fibres and fibre-composites for innovative textile products, functionalisation of textile materials and related processes and bio-based materials, biotechnologies, and environmentally friendly textile processing;
- 'New textile applications', for which the research priorities include new textile products for improved human performance, new textile products for innovative technical applications, and smart textiles and clothing.
- 'Towards customisation', which should focus on mass customisation for clothing and fashion, new design and product development concepts and technologies, and integrated quality and life cycle management concepts.

The SRA also emphasises that research and development work alone will not be enough to make the European textile and clothing industry more innovation driven and competitive. Very important preconditions for more innovation intensity in this industry highlighted in the SRA are:

- an innovation-friendly regulatory framework;
- an educational system to support industrial transformation;

⁽⁴⁵⁾ <http://textile-platform.eu/textile-platform>

- a financial system to accommodate textile innovation;
- innovation-supporting standardisation;
- capacities for effective management of innovation and technological change.

Update on platform activities

In 2007 a Political Mirror Group replaced the EU Textile Clothing High Level Group. A first meeting of this group took place in the first half of 2007 and was well attended by national and regional textile research policymakers. Another development was the creation of a European expert network on textile innovation.

The Future Textiles and Clothing ETP worked closely with existing national platforms or similar national textile research stakeholder networks in countries like Germany, France, Poland, Romania, Slovenia, and the United Kingdom. The platform supports the setting up of national platforms in other countries which are just embarking in such initiatives (the Czech Republic, Italy, Spain and Turkey).

The cooperation with other ETPs continued. FTC developed a joint initiative with the *Manufuture* ETP entitled Manutex, a joint initiative with the Biotech part of SusChem on the development of new bio-fibres, and a joint FP7 project brokerage event with the Industrial Safety ETP.

In the course of 2007, FTC has been particularly active in the area of internal communication, developing hundreds of pages for its protected online working area, as well as launching a web-based expert's communication system. Regarding external communication FTC has been similarly active, producing more than 50 publications, hosting five ETP events and participating in over 40 other events.

One of the key events organised by FTC was the 2008 edition of the Annual Public Technology Platform Conference, which took place on 28 and 29 May 2008 in Brussels. Other events in 2008 included a public seminar on higher education in textiles and clothing and a public Seminar on textile biotechnology organised together with the Sustainable Chemistry ETP.

During 2007 a first batch of SRA implementation projects were launched. This resulted in nine projects under the FP7 programme for nanosciences, nanotechnologies, materials and new production technologies for a total EU funding of EUR 31.4 million, as well as one project under the second call of FP7 ICT programme for a total EU funding of approximately EUR 800 000⁽⁴⁶⁾. Another proposal entitled Access-TexNet, related to networking and information, was submitted in February 2008 under the FP7 research infrastructure programme.

A number of projects related to improving the context for R & D and Innovation, for example in terms of regulation and standardisation, have been presented under diverse frameworks:

- NetFinTex (networking financial investors, business experts and support organisations to foster enhanced innovation activity among Europe's textile and clothing companies) with the goal to establish a permanent European

⁽⁴⁶⁾ http://cordis.europa.eu/fp7/cooperation/nanotechnology_en.html

textile and clothing innovation financing expert network whose activities and findings will be closely related to the horizontal task groups of the European Textiles and Clothing Technology Platform, in particular those dealing with innovation management and easier access to capital ⁽⁴⁷⁾;

- IP base, the framework that brings together activities of the IPR Help Desk and 19 national patent offices, aiming to create an opportunity to develop strategic cooperation between service-related intellectual property rights (IPR) programmes;
- the eBIZ-TCF project, a two-year cooperation project launched in January 2008 by the European Commission to boost e-business processes in the textile/clothing and footwear (TCF) industries, through harmonising business processes and data exchange architectures and standards, at European or international level ⁽⁴⁸⁾.

The total R & D budget granted for the implementation of the strategic research agenda in 2007 was almost equally composed of public funding, which accounted for EUR 35 million from the sixth and seventh framework programmes, and private resources, which accounted for EUR 25–30 million.

In January 2008 the European Commission published the communication entitled 'A lead market initiative for Europe ⁽⁴⁹⁾' highlighting six pilot markets, among which are protective textiles ⁽⁵⁰⁾.

Next steps

The platform will focus on increasing the research funding made available to the textiles sector under the seventh framework programme, while at the same time trying to find other funding sources for its activities. One of the key activities will be the development of an ERA-NET proposal for textiles and advanced materials research, to be prepared in close collaboration with the Mirror Group and expected to be submitted to the European Commission in 2009.

The Future Textiles and Clothing ETP will also continue its cooperation with the European Commission to deliver concrete results for the Personal Protective Clothing and Equipment (PPE) Lead Market pilot action. The platform has worked on ideas for potential future lead markets, i.e. medical textiles and high-strength materials. It will also develop action plans and first projects for horizontal issues under the competitiveness and innovation framework programme (2007–13) including for standardisation and public procurement.

⁽⁴⁷⁾ <http://www.europe-innova.org/index.jsp?type=page&lg=en&classificationId=5037&classificationName=NetFinTex&cid=5326>

⁽⁴⁸⁾ <http://www.ebiz-tcf.eu>

⁽⁴⁹⁾ Communication 'A lead market initiative for Europe' — COM(2007) 860, 21 December 2007

⁽⁵⁰⁾ <http://ec.europa.eu/enterprise/leadmarket/leadmarket.htm>

Launch

February 2005

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Vision document — 2005

‘Innovative and sustainable use of forest resources’

http://www.forestplatform.org/easydata/customers/ftp/files/pdf/FTP_Vision_Document_2030.pdf

Strategic research agenda — 2006

‘A strategic research agenda for innovation, competitiveness and quality of life’

http://www.forestplatform.org/easydata/customers/ftp/files/pdf/SRA_FTP_Final.pdf

Forest-based sector Technology Platform (FTP)

The EU forest-based industries constitute one of Europe’s largest industrial sectors, providing employment and income to some 2.6 million people directly and accounting for around 10 % of the European manufacturing industry’s total value of production, value added and employment ⁽⁵¹⁾.

The overall objective of the Forest-based sector Technology Platform (FTP), including all stakeholders with major interest in forest and forest-based materials and products, is to drive the sector into a new era, focusing on building a more knowledge-based and innovation oriented industry, while seeking continuous improvement in terms of sustainability.

⁽⁵¹⁾ http://ec.europa.eu/enterprise/forest_based/socioimpact_en.html

Strategic research agenda

The FTP strategic research agenda (SRA) is aimed at increasing the competitiveness of Europe by turning threats and challenges into opportunities through the development of innovative products and services.

It focuses on areas such as sustainability, product development, resource availability, multiple forest use, biodiversity, the production of bio-energy and energy efficiency. It also pays particular attention to communication activities on stewardship, in order to increase public awareness and provide effective responses to citizens' concerns.

Since the official launch of its strategic research agenda in May 2006, the FTP Platform has set up 25 national support groups within the EU-27 (plus Norway, Russia and Switzerland), and has started preparing national research agendas to address specific needs of the forest-based sector at Member State level. Fifteen of these national agendas have already been finalised and are being implemented. Another eight will follow.

Update on platform activities

The structure of the platform has remained almost unchanged throughout the implementation phase of the SRA, although task forces have been set up to carry out horizontal activities (e.g. Biorefinery Task Force; Innovation TASK force; Education and Training Task Force).

At the beginning of 2007 a FTP office was established in Brussels; it is run by a director and funded partly by a specific support action under the framework programme and partly by its own stakeholders. The director is assisted by a project secretary (funded from October 2007 through industry donations).

Regarding cooperation with other platforms, FTP continues to be active in the so-called Knowledge-Based Bio-Economy ETP network⁽⁵²⁾. Plants for the Future, SusChem, Biofuels and FTP intend to strengthen their partnership and work on a joint roadmap. Common issues include sustainable provision of plant material and biorefinery including bio-energy.

At the same time, 25 national technology platforms (national support groups — NSGs) have been established, which are represented in FTP's Advisory Committee and Communication Group. Two new NSGs have been launched in Autumn 2008 (Croatia and Greece). Moreover, contacts have been established with Brazil, China, India, North America, Oceania, Russia, and Turkey.

The platform has been very active in the area of external/internal communication and has organised several events, including the fifth conference of the Forest-based sector Technology Platform, (held in Slovenia in May 2008 under the Slovenian EU Presidency). During this event participants from across Europe, as well as delegates from North America, discussed the meaning of research and innovation in the forest-based business.

⁽⁵²⁾ http://ec.europa.eu/research/biosociety/kbbe/kbbe_en.htm

FTP established a new research network focused on the pulp and paper sector. This network, called EFPRO (European Fibre and Paper Research Organisation), brings together research institutes and universities in Europe which, together with its partnering organisations in the forestry and wood research areas (EFI and INNOVAWOOD), provide crucial support to the work of the FTP in implementing its SRA ⁽⁵³⁾.

In order to carry out a revision of the SRA during 2008, a consultation was launched in 2007. Fifteen Member States provided their input through establishing a national research agenda. Eight further Member States contributed to the updating of the SRA.

The implementation of the SRA has continued as well as fund-raising activities: more than 110 project proposals were submitted in to FP7 calls and the Woodwisdom-net ERA-NET calls ⁽⁵⁴⁾.

In 2008 there has been an emphasis on funding biorefineries' research, for instance launching projects aimed at new zero-waste biorefinery concepts integrated with chemical pulp production. The forest-based sector is expected to make substantial contributions towards reaching the EU strategic energy targets for 2020.

The Innovation Task Force, which is operating and collaborating very closely with the COST E 51, prepared a document on its findings concerning innovation in the forest-based Action sector.

Next steps

The FTP will continue the revision of its SRA through the mobilisation of national support groups. For the successful implementation of research priorities, FTP management will facilitate the establishment and implementation of consortia, funding initiatives and action plans.

In February 2009, the platform created its own legal entity (sprl) with the founding organisations as owners. This transition will simplify future activities and enable direct participation in European research projects.

Furthermore, an important communication event will take place: the sixth conference of the Forest-based sector Technology Platform will be held between 9 and 11 November 2009, in Stockholm, Sweden. The theme this year is "From Research to Business".

⁽⁵³⁾ <http://www.efpro.org>

⁽⁵⁴⁾ <http://www.woodwisdom.net>

Launch

December 2004

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<http://www.ifah.be/Europe/euplatform/platform.htm>

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Vision document — 2005

http://www.ifah.be/Europe/euplatform/Brochure_fin.pdf

Strategic research agenda — 2006

http://www.ifah.be/Europe/euplatform/SRA_May06.pdf

Implementation action plan — 2008

http://www.ifah.be/Europe/euplatform/ETPGAH %20Action %20Plan_August07.pdf

European Technology Platform for Global Animal Health (GAH)

With the increase in international trade, the movement of people and climate change new diseases are arriving in Europe. Outbreaks of major animal diseases such as bovine spongiform encephalopathy (BSE), foot-and-mouth disease, classical swine fever, avian influenza, bluetongue and West Nile fever can have a devastating impact on animal and human health, food safety, rural communities, the environment and the wider economy.

In Europe more than 50 000 full-time jobs depend on the animal health industry, with 15 000 directly involved in R & D, production, marketing, sales and administration. Total European sales in 2003 were EUR 3 700 million, comprising 33.3 % of worldwide sales ⁽⁵⁵⁾.

The European Union needs a strong framework for animal health research to be able to respond rapidly to the threat of new animal diseases. The European Technology Platform for Global Animal Health (GAH) constitutes a unique discussion forum for research in this field, acting as a communication channel between the research

⁽⁵⁵⁾ <http://www.ifah.be/Europe/euplatform/platform.htm>

community, the private sector and users of technologies such as chief veterinary officers, veterinarians and farmers.

The main aim of the European Technology Platform for Global Animal Health is to facilitate and accelerate the development and distribution of the most effective tools (vaccines, pharmaceuticals, diagnostic tests, etc.) controlling animal diseases of major importance to Europe and the rest of the world, thereby improving human and animal health, food safety and quality, animal welfare, and market access.

Strategic research agenda

The SRA is organised around six themes to reflect the issues which impact on the successful transfer of ideas into deliverable products, including:

- (a) prioritising animal diseases;
- (b) conducting a number of gap analyses;
- (c) ensuring high quality relevant fundamental research;
- (d) identifying the enabling factors to improve the rate of technology transfer;
- (e) considering regulatory issues;
- (f) maintaining a global perspective.

In each of the themes a number of recommendations are made. These recommendations fall into three categories. First, the short-term analyses which need to be completed to confirm the priority areas for research funding. Second, the priority areas already identified for funding. And third, the framework conditions needed to make the most out of research.

Update on platform activities

The structure of the platform has remained unchanged, but since the beginning of 2008 has a new funding mechanism; the Secretariat of the platform relies now on contributions from platform members.

As of May 2008 the Global Animal Health TP has set up seven national platforms (Mirror Groups) to discuss potential cooperation within individual Member States, assessing existing resources and avoiding duplication of efforts.

The platform, as a member of the Knowledge-Based Bio-Economy (KBBE) group of platforms, has participated in a number of meetings over the past months to exchange information and experiences ⁽⁵⁶⁾.

In the area of international cooperation, the Global Animal Health TP is exploring the possibilities of research cooperation with the OIE (World Organisation for Animal Health) and FAO, already formal partners of the platform, together with other international organisations such as WHO, GALVmed, DFID, OUA, the SAP Institute and VSF (an NGO very active in Central and West Africa). Discussion of possible cooperation with Australia, Canada, South America and the United States is also being considered.

⁽⁵⁶⁾ http://ec.europa.eu/research/biosociety/kbbe/kbbe_en.htm

In November 2007 the action plan for the implementation of the platform's SRA was launched. The overall objective of the action plan is to set short, medium and long-term priorities not only for European research programmes but also for national authorities and industry. The plan consists of a list of concrete measures that are necessary to facilitate and accelerate the development of tools for the control of major animal diseases. It also proposes key areas for EU funding for animal health research in the next 10 years to help prevent and treat diseases for which no product is currently available.

A key feature of the plan is a disease prioritisation model that will list diseases by their impact for society, based on parameters such as its impact on human and animal health, the ability of the disease to spread and food security, amongst others. Different strategies are pursued for funding the implementation of the action plan, including FP7 (in particular ERA-NET), national and private funds.

Next steps

The Global Animal Health TP will focus on making sure that the recommendations contained in the action plan are delivered by promoting the relevant research and by encouraging the alignment of national research programmes with the priorities identified in the action plan.

The ETP is also committed to updating the SRA and action plan to reflect completed work, ongoing priorities and new priorities that emerge over time.

Launch

February 2006

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ISI documents

ISI European Satcom flagship

ISI research programme and challenges

ISI strategic research agenda

All three documents are available in the section 'Documents' (subsection 'ISI strategic research agenda and White Papers') of the ISI website:

<http://www.isi-initiative.org>

Integral Satcom Initiative Technology Platform (ISI)

Satellites affect our daily lives in ways we do not even realise. They allow for the distribution of television signals, facilitate mobile communications, monitor the earth for a broad range of purposes (climate change, natural disasters, critical infrastructures) and also have a considerable impact on the world of business and finance.

Europe has been a pioneer of satellite communications and today Europe is the home of world-leading organisations in research, technological development, in-orbit operations, satellite control centres, terrestrial network interfacing, and the delivery of applications and services. The current challenge is for the European satcom sector to remain at the forefront of developments in the face of increasing competition.

The worldwide satellite communications market in 2007 was worth USD 123 billion (EUR 87 billion).

The overall vision of the ISI European Technology Platform is to ensure that the European satellite communication sector builds on the successes already achieved,

and makes a major contribution to delivering the full range of advanced digital services to European users, wherever they are and whatever they are doing. The ISI membership embraces all relevant and interested private and public stakeholders, with more than 170 member organisations covering 29 countries.

Strategic research agenda and other strategic ISI documents

The ISI strategic research agenda (SRA), which was enlarged in its scope by the platform's General Assembly and Steering Council and whose new advances were presented during the Satellite Communication Consultation event in April 2008 in Brussels, focuses on three fundamental areas of satellite communication: broadband, broadcast and mobile. The SRA has been complemented by other two documents, named 'ISI European Satcom flagship' and 'ISI research programme and challenges'.

The SRA, the flagship document and the research programme document identify a set of broad challenges for the European satcom industry, related to technical and regulatory barriers, standardisation and market conditions. They propose to work on these challenges through research and development activities on:

- new technologies, with lower costs and faster deployment,
- innovative services and integrated applications, within both commercial and institutional domains,
- design of flexible satellite missions,
- interfacing with terrestrial networks, with urban and in-building coverage,
- Internet protocol-based approach,
- open standards with worldwide promotion,
- dual-use technologies,
- satcom support to Galileo and GMES,
- harmonising spectrum availability across European and internationally,
- exploiting higher frequency bands,
- harmonising the regulatory framework.

A fundamental consideration underlying the ISI SRA is that of long lead times, and the consequent need for early, anticipatory, technology development. A further underpinning theme is to pioneer new applications which integrate satellite communications and broadcasting with other satellite functionalities, thus permitting considerable advances within key domains including security, environmental monitoring, disaster and emergency relief, navigation/positioning, ad hoc networking and air traffic control/air traffic management systems.

Update on platform activities

The structure of the platform has undergone some changes through the implementation phase of the SRA, including the establishment of new working groups, changes in the role of the Steering Council and further reinforcement of the General Assembly. Since the beginning of 2008, the Secretariat activities have been supported by the ISI support action (sISI) under the seventh framework programme.

The platform has started to develop a network of national technology platforms, establishing one in Spain. Contacts and cooperation with other ETPs in the ICT area

(eMobility, EPOSS, NEM and NESSI) continued and will further increase in the near future, especially on issues related to the topic of the future Internet.

ISI had already defined a 'Research programme and challenges 2007–08' and is in the process of defining new contributions to future FP work programmes.

As a fundamental element of the ISI strategy, an important step was made with the definition of the ISICOM (Integrated Space Infrastructure for Global Communications) system. ISICOM is intended to be the ISI proposal for a future advanced European Satellite Communications system, as the 'third leg' of the European space policy, complementary to Galileo and GMES and integrated with the global terrestrial networks of the future (including the future Internet). In order to follow closely the developments of this ambitious project, a dedicated vertical expert group, the ISICOM Task Force, was set up.

In order to enhance internal/external communication and coordination amongst the different stakeholders, ISI has recently renewed and improved its website, enabling fast access to relevant information, strategic documents, news and meetings/events planning, together with cooperative working tools.

As satcom systems use spectrum and are subject to national, European and international regulations for spectrum management, licensing and authorisation processes, the platform carries out important work on regulatory matters. The platform has developed a publication together with CEN (the European Committee for Standardisation) and other standardisation forums.

Next steps

An important next step will be the development and implementation of the ISICOM system, carefully considering key-user requirements; filling technological capability gaps; supporting standardisation of new protocols and interfaces, especially the inter-satellite and satellite-to-ground protocols; and deploying a fully integrated network with global capabilities, embedded with terrestrial backbones.

In terms of membership, additional energy will be devoted to further enlarging the ISI community, particularly with members from new Member States.

Launch

2003

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Vision document — 2004

'*Manufuture* — Assuring the future of manufacturing in Europe. A vision for 2020'

[http://www.manufuture.org/documents/manufuture_vision_en\[1\].pdf](http://www.manufuture.org/documents/manufuture_vision_en[1].pdf)

Strategic research agenda — 2006

'*Manufuture* — Assuring the future of manufacturing In Europe. Strategic research agenda'

<http://www.manufuture.org/strategic.html>

Future Manufacturing Technologies (*Manufuture*)

The manufacturing sector in Europe today faces intense and growing competitive pressure on several fronts. In the high-tech sector, other developed economies pose the greatest threat. In more mature traditional sectors, manufacturing is increasingly migrating to low-wage countries such as China and India. Moreover, additional challenges such as the shortening life cycle of enabling technologies, environmental and sustainability issues, the socioeconomic environment and the regulatory climate put further pressure on European manufacturing.

The economic importance of sustaining a strong manufacturing base in Europe is evident from the fact that it provides jobs for around 37 million people, and produces an added value exceeding EUR 1 800 billion from 230 000 enterprises with 20 and more employees. Manufacturing activity in Europe represents today approximately 36,5 % of EU GNP.

For European industries to remain competitive in the increasingly complex global economic environment, it is crucial that they modernise their manufacturing base and strengthen the links between research and innovation. The *Manufuture* European Technology Platform brings together a wide range of industrial, research and academic representatives and aims to provide an analysis and methodology leading to a transformation of European manufacturing industry into a knowledge-based sector capable of competing successfully in the globalised marketplace.

Strategic research agenda

The *Manufuture* strategic research agenda (SRA) foresees research topics over a time horizon of 10 years (divided into short, medium and long term). It was developed by its governing body (the High Level Group) and advocates the use of science-based solutions to make European industry competitive in terms of high added-value, since competition purely based on cost is unsustainable. The envisaged measures are structured in five priority pillars and their associated enabling technologies:

- new, high added-value products and services,
- new business models,
- new manufacturing engineering,
- emerging manufacturing science and technologies, and
- transformation of existing RTD and educational infrastructures to support world-class manufacturing, fostering researcher mobility, multi-disciplinarity and lifelong learning.

Update on platform activities

The platform currently has 1 700 registered members, including 1 300 SMEs, 230 large companies, 120 research institutes, 20 associations and 30 governmental bodies. In 2008 the operational costs of the platform were financed by the FP and by private resources (in kind).

Currently the structure of the platform is undergoing some changes. A stronger presence of industry will be ensured in the High Level Group with the nomination of two industrial members at the level of R & D managers from each national *Manufuture* initiative. The first meeting of the new High Level Group took place in Brussels on 23rd February 2009.

Cooperation with national and regional governments continued, especially through the participation of Member States' representatives in the Mirror Group (currently counting 37 members), and resulted in the set up of 26 national/regional *Manufuture* initiatives. These initiatives are at various stages of maturity, and at least four of them have been officially appointed by their national governments to write the national research programme for manufacturing. Moreover, several of these initiatives have agreed to work on the following horizontal pilot actions: the SME universe, the mechatronics world, best practices and success stories, and footwear.

Additionally, the platform actively encouraged and supported the establishment and the work of national platforms, which already exist in Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, The Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden,

Switzerland, and the United Kingdom, and are in preparation in several other countries.

Contacts with other ETPs were intensified, including with Construction, Industrial Safety, SusChem, Textiles and Waterborne. *Manufuture* has signed memorandums of understanding for close collaboration with some of them ⁽⁵⁷⁾.

Manufuture has developed a number of joint activities with other European initiatives:

- EU-MECHA-PRO (a coordination action funded by the European Commission under the sixth framework programme, for supporting the development of industry and research roadmaps);
- CET (Clean Environment Technology)
- Footwear
- MANUTEX, (footwear products and processes) ⁽⁵⁸⁾;
- MINAM (micro and nanomanufacturing) ⁽⁵⁹⁾;
- RM (rapid manufacturing) ⁽⁶⁰⁾;
- European Concept - focused on new added-value product-services design;
- Tooling;
- AET (Agricultural Engineering Technologies).

In the area of international research cooperation, Intelligent Manufacturing Systems (IMS) activities are envisaged. The European IMS initiative encourages the formation of international research consortia to address industrial manufacturing and organisational challenges in the 21st century ⁽⁶¹⁾.

In the field of internal/external communication the platform has carried out a number of activities, including the organisation of approximately 20 events, including the annual *Manufuture* conference—European regions and SMEs for implementing manufacturing strategic priorities. This conference took place in December 2008 in St. Etienne and brought together 430 participants from 36 different countries to debate the role of SMEs and of the European regions for implementing the strategic priorities defined in the *Manufuture* SRA. and the conditions for efficient governance. ⁽⁶²⁾. In conjunction with this conference, *Manufuture* organised a brokerage event aimed at creating consortia for European projects which was attended by 230 people.

The outcomes of the previous *Manufuture* Conference in 2007 were compiled in the 'Porto Manifesto'. On 30 July 2008, a delegation from the *Manufuture* ETP met with EU President Barroso to present and discuss the platform's vision for a sustainably competitive European future as set out in its 'Porto Manifesto' document ⁽⁶³⁾. The *Manufuture* annual conference 2009 will take place in Gothenburg (SE) in November 2009, under the Swedish EU Presidency, with a focus on Implementation of a Sustainable European Manufacturing Industry.

⁽⁵⁷⁾ [http://www.manufuture.org/documents/Press_release %20Manufuture-FETP.pdf](http://www.manufuture.org/documents/Press_release%20Manufuture-FETP.pdf)

⁽⁵⁸⁾ <ftp://ftp.cordis.europa.eu/pub/ims/docs/5-16-carpanzano.pdf>

⁽⁵⁹⁾ <http://www.minamwebportal.eu/index.php?m1=Public-Area>

⁽⁶⁰⁾ http://www.rm-platform.com/index.php?option=com_frontpage&Itemid=1

⁽⁶¹⁾ <http://cordis.europa.eu/ims/home.html>

⁽⁶²⁾ <http://manufuture2007.inescporto.pt/programme.html>

⁽⁶³⁾ <http://www.manufuture.org/documents.html>

The platform has been also working on a proposal for a public–private partnership (PPP) focusing on enabling technologies for the factories of the future. A dedicated task force was created at the last *Manufuture* High Level Group meeting on 5 March 2008 in Athens and its first meeting took place on 16 May in Brussels. As a preliminary step, a meeting with the MANUNET ERA-NET was held in April in order to start considering a possible ERA-NET Plus. In October 2008 the High Level Group agreed to continue, and in following meeting in March 2009 decided to establish a European Factories of the Future Research Organization (EFFRA) led by industry. EFFRA is a legal entity that will act as the European Community’s private partner. It was founded on 17th April 2009 and held its first general assembly on 26th May 2009. This was a very important milestone for the activities of the platform.

The Factories of the Future initiative is part of the recovery package adopted by the European Commission on 26 November 2008 and endorsed by the European Council on 11 – 12 December 2008 to develop and implement clean technologies for the manufacture sector.

The next *Manufuture* Conference will take place in Gothenburg (Sweden) from November 30 to 1 December 2009.

The implementation of the SRA is progressing. The FP7 Nanotechnologies and nanosciences work programme for 2007 includes five topics directly linked with the *Manufuture* strategic research agenda, and at least five others which are indirectly linked. Approximately 45 % of the total budget of this work programme is directly or indirectly related to the SRA. Pilot action EUREKA cluster.

Finally, the platform started planning the “second lifecycle”. The future tasks for the *Manufuture* platform are

- Global strategy, roadmapping, monitoring and evaluation
- Horizontal topics like Education, EMIRA, etc.
- Global “political” interface with the EC

Next steps

In the future it will be necessary to maintain, increase and enhance *Manufuture* activities by:

- securing additional financial resources;
- promoting at all political and public levels a positive image of manufacturing;
- concentrating on the short and visible return on investment periods for 80 % of the money invested;
- obtaining attention and engagement from industrial stakeholders, governmental organisations, and the press (at EU, national, regional level);
- co-operating with related ETPs to maximise the multi-sectoral usability of results;
- ensuring effective FP7 execution;
- maximising innovation and economic results by establishing measurable criteria for project success in cooperation with the Commission.

The platform will also continue defining a strategy for international collaboration in the area of sustainable competitive manufacturing. For this purpose, a second visit to

Japan of a delegation of the newly created *Manufuture* Association and the EC was organised in April 2009.

Launch

2005

Website

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Vision document — 2005

‘Vision paper and basis for a strategic research agenda for nanomedicine’

http://www.etp-nanomedicine.eu/public/press-documents/publications/etp-nanomedicine-visionpaper/at_download/file

Strategic research agenda — 2006

‘Nanomedicine: nanotechnology for health’

http://www.etp-nanomedicine.eu/public/press-documents/publications/strategic-research-agenda/at_download/file

Nanotechnologies for Medical Applications (Nanomedicine)

An ageing population, expectations of a better quality of life and changing lifestyles call for improved, more efficient and affordable healthcare. A better understanding of the functioning of the human body at the molecular and nanometre scale as well as the ability to intervene at pre-symptomatic, acute or chronic stages of an illness are of utmost importance to meet these expectations. Nanomedicine, the application of nanotechnology to medical problems, has the potential to enable early detection and prevention and to essentially improve diagnosis, treatment and follow-up of many illnesses, including cancer, cardiovascular diseases, diabetes, AIDS, Alzheimer’s and Parkinson’s disease, as well as any kind of inflammatory and infectious disease.

Currently Europe has a strong position in the emerging field of nanomedicine. Although at present there is little market data specifically on nanomedicine, an analysis of the market segments for medical devices and drugs and pharmaceuticals gives an idea of the leverage of nanomedicine on the markets. These two market segments represented in 2003 an end-user value of EUR 535 billion, of which the drugs segment is the most important, with a value of EUR 390 billion. Globally this market has been growing at a 7 to 9 % annually.

In order to prevent fragmentation and a lack of coordination in this young and fast-growing field, industry and academia — together with the European Commission — have identified the need for a European initiative to bring together the several strands of nanomedicine into a firm strategy for advancement. The resulting European Technology Platform on Nanomedicine addresses the research, development and innovation needs in nanotechnology for health with the aim of strengthening the competitive, scientific and industrial position of Europe in the area of nanomedicine and improve the quality of life and healthcare of its citizens.

Strategic research agenda

The strategic research agenda (SRA), which has not been revised since its first publication, identifies three main areas on which research should concentrate:

- nanotechnology-based diagnostics including imaging; focusing on identifying disease at the earliest stage possible, ideally at the level of a single cell in order to cure it or eliminate it;
- targeted drug delivery and release; focusing on targeting selected cells and/or receptors within the body, in order to reduce healthcare costs and to deliver new classes of pharmaceuticals that cannot be effectively delivered by conventional means;
- regenerative medicine; focusing on rectifying chronic conditions using the body's own healing mechanisms, thanks to a deeper understanding of the basic biology of tissue regeneration and the identification of effective ways to initiate and control the regenerative process. Artificial skin, bone and cartilage are already in an advanced stage and partly on the market.

The SRA also takes into consideration a number of horizontal issues linked to these three topics, including ethical requirements, benefit/risk assessment, public acceptance, regulatory framework, intellectual property rights, research infrastructure, and education and training issues.

Update on platform activities

The platform is steadily growing and currently has over 150 members, the majority of them from industry.

New terms of reference for the platform were adopted at the 2008 General Assembly, following decisions taken at the 2007 General Assembly ⁽⁶⁴⁾. A new ETP Secretariat funded by membership fees started working in July 2008. It will address the increasing demand for operational and strategic support for the platform's initiatives. From now on there will be only one general and one technical assembly per year.

⁽⁶⁴⁾ ftp://ftp.cordis.europa.eu/pub/nanotechnology/docs/terms_of_reference_etp_nanomedicine_08_02_22.pdf

The platform started to develop a network of national technology platforms, establishing NTPs in Spain and France and supporting the creation of many others by taking part in meetings and providing materials. Additionally, cooperation with national governments has been strengthened thanks to the increased participation of representatives of Member States in the Mirror Group, currently numbering 34 members.

Nanomedicine is in close contact with several other ETPs via cooperation of their executive boards, chairpersons, and members. In particular, the platform cooperates with the Innovative Medicines Joint Undertaking (IMI), Photonics (Photonics 21), Smart System Integration TP (EpoSS) and Sustainable Chemistry (SusChem).

International cooperation and international dialogue in nanotechnology are important activities promoted by the European strategy and the action plan on nanotechnology⁽⁶⁵⁾. The Nanomedicine ETP, which can be considered the biggest multi-sector nanomedicine stakeholders group in the world, has regular contacts with international expert groups in the field.

A number of workshops were organised over the past few months to give advice to ETP members on best practices for submitting proposals. A two-day working group assembly was held in Madrid in September 2008, dedicated to an intensive discussion of nanomedicine-related topics, including nanodiagnostics, regenerative medicine and targeted drug-delivery. Furthermore, issues such as IPR and regulatory aspects, as well as ethical, legal and societal implications were discussed.

The implementation of the SRA is progressing successfully, also thanks to EU funding for nanomedicine projects, which has increased over the years. The framework programme's 'Nanotechnologies, materials, processes' (NMP) programme has spent some EUR 250 million on projects linked to nanomedicine in the period 2002–06⁽⁶⁶⁾. More than 50 activities in the calls opened in 2008 are directly relevant to nanomedicine, and it is expected that total funds made available for nanomedicine through FP7 will be double the FP6 figures.

Next steps

Over the coming period the platform will work on the following objectives:

- expand the membership base,
- regularly update the strategic research agenda,
- complete the implementation action plan,
- increase industrial investment,
- relaunch the platform's Web portal, with the aim of offering its members a number of high quality services ranging from first-hand information on European activities in the area of nanomedicine to, at a later stage, an online marketplace for the exchange of project ideas and requests.

⁽⁶⁵⁾ <http://cordis.europa.eu/nanotechnology/actionplan.htm>

⁽⁶⁶⁾ http://ec.europa.eu/research/fp6/index_en.cfm?p=3

Launch

2005

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Vision document — Version 2007 (version 2008 in preparation)

‘NEM vision 2020’

<http://www.nem-initiative.org/Documents/NEM-V-002.pdf>

Strategic research agenda — fifth version 2007 (version 2008 in preparation)

<http://www.nem-initiative.org/Documents/NEM-SRA-050.pdf>

NEM strategic research agenda coverage by FP7 — Call 1

<http://www.nem-initiative.org/Documents/NEM-SRA-051.pdf>

Networked and Electronic Media (NEM)

The NEM sector relies heavily on innovation and contributes substantially to the growth of the economy. The convergence of media, communications, consumer electronics, and IT opens a wide range of opportunities for future growth. In particular, the advent of home and extended home networks and platforms is a very promising growth opportunity for the next decade. Current challenges for the sector include:

- creating interoperable network infrastructures that enable seamless multimedia networking;
- empowering end-users by putting the user first;
- promoting ‘electronic content from all, to all’;
- merging the various media and content formats;
- developing new middleware for media applications.

ICT has grown from 4 % of EU GDP in the early 1990s to around 8 %, and accounted for 6 % of employment in the EU in 2000. It is one of the most innovative sectors, representing 18 % of overall EU spending in R & D. More than one million people are directly employed by the NEM sector in the European Union and a significant share of this employment is for highly qualified engineering jobs.

The main objective of the Networked and Electronic Media Technology Platform (NEM) is to foster the development and introduction of novel audiovisual and multimedia broadband services and applications to benefit European citizens and enterprises. Bringing together a broad range of stakeholders (including broadcasters, telecom operators, manufacturers of professional equipment, manufacturers of consumer electronics, academia and standardisation bodies) NEM represents the convergence of existing and new technologies, including broadband, mobile and new media across all ICT sectors, to create a new and exciting era of advanced personalised services.

Strategic research agenda

The NEM strategic research agenda outlines the technical work needed to achieve the vision elaborated in the NEM initiative's vision document, which outlines three key objectives for the 2015 time frame:

- a leading European networked and electronic media industry competitive with other regions in the world;
- a regulatory environment favouring the deployment of NEM technologies;
- open business models across the value network and novel revenue generating models.

The SRA has identified four main areas on which research should concentrate, including:

- content creation, focusing on: new forms of content; representation of content; tools for content creation and manipulation; automated semantic annotation; human language technologies;
- networking and delivery infrastructure, focusing on: intelligent delivery; quality of service; networking types; home and extended home networks;
- media presentation and content access, focusing on: authentic, true-to-original media reproduction; virtual reality; dynamic federation of distributed interface devices; user-system interaction;
- enabling technologies, focusing on: security and privacy; rights management; technologies for federated services; middleware.

The research and development work described in the SRA can be fulfilled through the European Union's seventh, other international programmes such as Eureka, the joint technology initiatives and the national programmes of the Member States.

Update on platform activities

NEM has over 600 members, of which almost half are research institutes. The platform is mainly funded by industrial partners and sustained by specific framework programme support actions (NEMI and 4NEM).

National platforms were created with a similar structure and vision such as NEM. Moreover, NEM is linked with the national and regional governments through Celtic, a Eureka cluster and the only European R & D programme in ICT fully dedicated to end-to-end telecommunication solution ⁽⁶⁷⁾.

⁽⁶⁷⁾ <http://www.celtic-initiative.org>

In terms of cooperation with other platforms, several meetings took place over the past year with eMobility, EPoSS, ISI and NESSI. NEM is also participating in a specific cross-platform working group to define a common vision on the future Internet and analyse the possibility of proposing a public–private partnership in this area ⁽⁶⁸⁾. The ICT technology platforms are currently working on a common agenda containing the major future Internet issues that need to be addressed to influence the content of upcoming European research programmes. Moreover, NEM, together with the other ICT ETPs, presented a joint information booth at Europe’s biggest research event for information and communication technologies: ICT 2008 ⁽⁶⁹⁾.

The platform prepared the NEM summit ‘Towards future media Internet’, which brought together content producers, technology providers and future media Internet users ⁽⁷⁰⁾. The NEM summit was a milestone event in the second half of 2008 that consolidated the European initiative focusing on the future media Internet.

The NEM Open Forum, a permanent think tank, was officially launched during the summit. It will be charged with complementing the core work of NEM by anticipating ideas and views and expressing comments about how NEM and the Networked Media technologies are evolving.

NEM is also pioneering an International MSc to address the critical need for strong links between education and European research. It is a pilot project aimed at bringing together both the EHES (European Higher Education Space) and the ERA (European research area).

Next steps

In the future NEM will work on reaching the following objectives:

- revision of its vision document and SRA for addressing the major challenge that the domain needs to consider in the future, i.e. the magnitude with which the overall digital universe is increasing;
- continuation of the collaboration with other ICT ETPs to define a common vision on the future Internet and the role of services in this vision;
- creation of a NEM content activity, with the aim of bringing together individuals and organisations from across the content industry to discuss common problems, and to identify technological barriers to the advancement of content production in Europe;
- monitoring of FP7 projects (over 70 proposals for research projects in ICT first call of the seventh framework programme addressing the SRA of NEM) to identify their mapping, overlapping, synergies, etc., based on a preliminary analysis of the projects being under negotiation following the results of the evaluation of the proposals submitted ⁽⁷¹⁾.

⁽⁶⁸⁾ http://ec.europa.eu/information_society/activities/foi/index_en.htm

⁽⁶⁹⁾ http://ec.europa.eu/information_society/events/ict/2008/index_en.htm

⁽⁷⁰⁾ <http://www.nem-summit.eu/agenda.html>

⁽⁷¹⁾ <http://www.nem-initiative.org/Documents/NEM-SRA-051.pdf>

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Vision document — 2005

http://www.nessi-europe.eu/Nessi/Portals/0/Nessi-Repository/Publications/Flyers/2005_09_Vision_V2.pdf

Strategic research agenda

Vol. 1: Framing the service economy — 2006

Vol. 2: A strategy to build NESSI — 2008

Vol. 3: The short-, medium- and long-term roadmaps — 2008

<http://www.nessi-europe.eu/Nessi/Publications/NESSIDocuments/tabid/590/Default.aspx>

Networked European Software and Services Initiative (NESSI)

Information and communication technology (ICT) is an essential driving force for innovation and a core enabler of economic growth. The IT services marketplace is changing dramatically, due to a series of challenges including:

- an ever increasing pace of change caused by globalisation and technological innovation;
- a continuing shift toward increasingly tailor-made solutions;
- a major shift toward mission-critical 24/24 running systems;
- new needs of end-users such as ubiquitous access, ease of use and personalisation;
- the emergence of open source software.

ICT has grown from 4 % of EU GDP in the early 1990s to around 8 %, and accounted for 6 % of employment in the EU in 2000. It is one of the most innovative sectors, representing 18 % of overall EU spending in R & D. Within the ICT area, the sector of software and IT services employs more than one million European specialists and is

expected to account for EUR 215 billion in revenues with an expected growth in 2005 of around 4.4 %. This figure, roughly 2 % of the European GDP, represents 65 % of the total European IT market value and 31.5 % of the total European ICT market value.

The NESSI mission is to develop a visionary strategy for software and services driven by a common European research agenda, thereby transforming the European economy into a knowledge-based economy and enabling the European software and IT services industry to attain a stronger global position. The NESSI community includes leading players from industry, SMEs, academia and users.

Strategic research agenda

To achieve its mission the NESSI strategic research agenda (SRA) is being developed in three volumes.

- Volume 1 — ‘Framing the future of the service-oriented economy’ —introduces the NESSI holistic model which defines NESSI in the context of a holistic approach to an ecosystem in which all the parties involved coexist and which can develop into a new economic model. This holistic model embraces the whole service area and foresees NESSI as a key element in the EU economy. It illustrates the three main constituents of the context of NESSI:
 - ‘NESSI Framework’ where the services, the key elements of the ecosystem, are engineered;
 - ‘NESSI Landscape’ comprising an emerging service economy, where services are applied to specific businesses and domains as well as made cross-domain; and
 - ‘NESSI Adoption’; a set of instantiation mechanisms based on regulations, rules and policies, experiences and learning approaches.
- Volume 2 — ‘Strategy to build NESSI’ — introduces NEXOF (NESSI Open Service Framework) and the open contribution model. It was released as a draft in December 2007 and the final version was published in March 2008.
- Volume 3 — ‘NESSI roadmap’ — is a series of documents dealing with different domains to plan the short, medium and long-term phases in the execution of NESSI. Two issues have been released: the first in July 2006, which focuses on contributions to the FP7 work programme for 2007–08, and the second in February 2008, focusing on contributions to the FP7 work programme for 2009–10.

The SRA has enabled NESSI to define its key delivery as NEXOF, the NESSI Open Service Framework, which is intended to support the whole NESSI holistic model as an *integrated, consistent and coherent* set of technologies, methods and tools.

Update on platform activities

Over the past year new members joined the platform, which now gathers together 300 organisations (represented by 500 individuals) of which almost half are research institutes. These members participate in NESSI and provide input to its core activities through the NESSI working groups. These working groups started focusing on the technological domains of the SRA, but in the past few years three horizontal working

groups (on SMEs, Open Source and i-Government) and a committee on the future Internet were launched.

While Platform activities are mainly supported financially by industrial partners and sustained by a framework programme specific support action (NESSI-2010), all partners from academia and industry commit human resources to NESSI's activities and research.

NESSI is also linked to national initiatives acting as national NESSI platforms and created with a similar structure and vision to NESSI's. National NESSI platforms operate in Bulgaria, Norway, Poland, Slovenia and Spain, and are emerging in Israel and Italy. Moreover, NESSI is linked with national and regional governments through national representatives of the Member States' Committee.

At the level of research, NESSI has moved forward in the elaboration of NEXOF. NESSI has defined a research structure that enables ongoing and future research to qualify as strategic or compliant to NEXOF, contributing major building blocks.

Research activities have started through the launch of projects with the support of European, national and industrial funds. These include:

- six NESSI strategic projects: EzWeb, Master, NEXOF-RA, Reservoir, SOA4ALL, SLA@SOI;
- three NESSI compliant projects: TAS³, Compas, PrimeLife2;
- one support action: NESSI-2010;
- one network of excellence: S-Cube (outside of NESSI but in close cooperation with it).

Among these, NEXOF-RA, an FP7 IP project, aims at building the NESSI Open Service Framework (NEXOF) through an open contribution model. All other NESSI strategic projects will deliver key elements of NEXOF, as well as analysing services scenarios in more detail.

Contribution to NEXOF has also taken the form of open calls, issued to all NESSI and non-NESSI stakeholders, through which the architecture of NEXOF can be defined using a truly open and transparent process. The first call, launched in July 2008 and closed in October, created worldwide visibility with contributions received from Europe as well as from China, Korea and the United States.

Over the past year, NESSI has also elaborated a position paper on a 'European software strategy', which includes a set of key recommendations to strengthen the European software industry.

Cooperation with other ICT platforms has increased considerably, with a cross-platform working group between eMobility, ISI, NEM and NESSI on the elaboration of a common vision on the future Internet. The collaboration has also generated common dissemination activities, with a cross-platform networking session and information booth during the ICT 2008 conference and the organisation of the new ServiceWave conference in Madrid in December 2008.

ServiceWave2008 was organised through collaboration between the ETPs eMobility, EPoSS, ISI, NEM and NESSI, Networks of Excellence S-Cube and CoreGrid, Think Tank Eiffel, National Platform INES, and the American ICSSOC organisation. Its scientific track attracted 100 submissions, of which 28 papers were selected. Its industrial panels were organised into four different topics, while the future Internet open questions were the focus of the first afternoon.

Next steps

- (a) Further elaboration of NEXOF and the continued management of the open contribution model.
- (b) Investigation of the adoption barriers in terms of services at the legal, infrastructure and systemic levels.
- (c) Creation of additional scenarios to validate NEXOF through real-life approaches.
- (d) Effective linkage towards user communities, specifically in the areas of i-Government and health, with additional areas under analysis such as energy, transport, skills and learning.
- (e) Continued collaboration with the other ICT ETPs to define a common vision on the future Internet and the role of services in this vision.
- (f) The ServiceWave event. This initiative aims to establish the premier European forum for researchers, educators and industrial practitioners to present and discuss the most recent innovations, trends, experiences and concerns in software services (or the 'Future of the Internet of services') and related underlying network technologies ⁽⁷²⁾.

In parallel, through collaboration with other ETPs active in the ICT area, NESSI is also analysing the pros and cons of proposing a public-private partnership on the future Internet.

⁽⁷²⁾ <http://www.servicewave.eu>

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June 2004

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Vision document — 2004

'Plants for the future: 2025. A European vision for plant genomics and biotechnologies'

[http://www.epsoweb.org/Catalog/TP/Plants %20for %20the %20future-Dec04.pdf](http://www.epsoweb.org/Catalog/TP/Plants%20for%20the%20future-Dec04.pdf)

Strategic research agenda — 2007

http://www.epsoweb.org/Catalog/TP/Launch_25June07/TP_SRA_Summary.pdf

Detailed SRA and first action plan — 2007

http://www.epsoweb.org/Catalog/TP/Launch_25June07/TP_SRA_PART_II+III.pdf

Plants for the Future (PLANTS)

The human population will continue to grow bringing with it increased constraints on the earth's natural resources. For Europe, as well as for the rest of the world, the key challenge for the coming decades will be to meet local needs for food, both in terms of quantity as well as quality, while conserving natural resources and biodiversity.

The European bio-based sector — defined as the economic sectors that produce, manage and exploit biological resources — has an annual turnover of over EUR 1.62 trillion and employs 22 million people. An important part of the sector is agricultural production, which employs 8 % of the EU workforce and employs 15 million people.

The overall objective of the Plants for the Future ETP is to facilitate and accelerate the development and deployment of plant research, including genomics and biotechnology, to ensure European and global supply of healthy, safe and sufficient food and feed; to work towards sustainable agriculture, forestry and landscape; to develop green products; and to contribute to the competitiveness of European

agricultural, food and biotechnology industry, to consumer choice and to good governance.

ETP members come from industry (e.g. crop improvement, seed, food, feed, retailers, etc.), farmer organisations, academia or other stakeholder groups, such as educational, financial, consumer and environmental organisations.

Strategic research agenda

After a number of consultations with the European Commission and Parliament representatives, national stakeholders and ministry representatives of 19 countries, the strategic research agenda reached its final version in 2007, was and it was launched at the European Parliament in June of the same year.

The SRA identifies five challenges:

- healthy, safe and sufficient food and feed; with a focus on developing and producing safe and high quality food; creating food products targeted at specific consumer groups and needs; and producing safe, high quality, sufficient and sustainable feed;
- plant-based products, chemicals and energy; with a focus on enabling research; biochemicals; industrial feedstocks and biopolymers; and bio-energy;
- sustainable agriculture, forestry and landscape; with a focus on improving plant productivity and quality; optimising agriculture to further reduce its environmental impact; boosting biodiversity; and enhancing the aesthetical value and sustainability of the landscape;
- vibrant and competitive basic research; with a focus on advanced genome resources and plant breeding; novel uses of genomic diversity; improved GM technologies; multilevel precision phenotyping, systems biology; computational biology and modelling; and basic plant processes;
- competitiveness, consumer choice and governance; with a focus on public consumer involvement; ethical issues; safety and legal issues; and financial environment.

These five pillars fully support the development of a Knowledge-Based Bio-Economy (KBBE) that aims at providing secure future fuel and food supplies in an environmentally sustainable way. The SRA will be updated every five years.

Update on platform activities

After receiving EU support (via a specific support action under the sixth framework programme until July 2007), the platform launched a membership fees system in April 2008, with a set of agreed activities for the next three years. The members represent the three stakeholder groups involved in the Plant TP since its start: industry, farmer organisations and academia.

Another development of 2008 was the three categories of participants in the platform's Steering Council meetings: members (representing the financial

contributors to the ETP), experts (i.e. on SMEs and regulatory issues) and observers (from public bodies).

Two national platforms were created (in Italy and Turkey), and several others are underway (Germany and Spain). Setting up national platforms remains a priority for the platform in 2009.

The year 2007 has seen a strong cooperation among all the KBBE ETPs (the network of Knowledge-Based Bio-Economy Platforms) ⁽⁷³⁾. This has resulted in the submission of a joint proposal for a coordinated support action under FP7.

Next steps

Plants for the Future will work over the coming three years with a focus on promoting and advocating strategic and internationally competitive research. Education, communication and innovation support (including general policy statements) will be complementary tasks.

The core of its efforts will be on the implementation of the SRA (the implementation plan should be finalised by the end of 2009), fostering cooperation among industry, the farming community and academia. The SRA will be monitored and updated after five years. The SRA is not limited to research, but encompasses as well societal, legal or educational aspects.

The platform will work closely with its partners: related ETPs from the Knowledge-Based Bio-Economy area (KBBE), the ERA-NET Plant Genomics, the Plant-KBBE ERA-NET, and research councils and political bodies at European, multinational and national level. This will also include discussions about the future of the Joint Programming Initiative as well as funding sources for platform activities.

The platform will encourage the development of national technology platforms or support groups. This aims at stimulating the development of national SRAs and implementation plans, creating a dialogue between the European and national level including researchers, farmers, industry, and national and European funding bodies and regulators.

The platform is open to new members, in particular more small and medium-sized companies (which constitute a large part of the plant industry sector), national farming communities and members from new Member States.

⁽⁷³⁾ http://ec.europa.eu/research/biosociety/kbbe/kbbe_en.htm

Launch

December 2005

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Vision document

‘Photonics for the 21st century’

<http://www.photonics21.org/pdf/visionpaperPh21.pdf>

Strategic research agenda — 2008

‘Towards a bright future for Europe’

http://www.photonics21.org/pdf/sra_april.pdf

Photonics in Europe: Economic Impact

http://www.photonics21.org/pdf/Brosch_Photonics_Europe.pdf

European Technology Platform for Photonics (Photonics21)

In 1967 Pierre Aigrain, a French scientist, coined the term ‘photonics’ to describe a new field of study and enterprise that emerged as a synthesis of a number of disciplines all involved in the mastery of the photon: optics, material science, electrical engineering, nanotechnology, physics and chemistry. Its importance can be seen from the multitude of application sectors where it is increasingly seen to be driving innovation, including information, communication, imaging, lighting, displays, manufacturing, life sciences and healthcare, and safety and security.

The Photonics sector in Europe employs around 246 000 people and comprises well over 5 000 manufacturing companies, most of them small and medium-sized enterprises. The revenue of the sector grew by 12 % to EUR 49 billion in 2006, resulting in a global market share of 19 % making it a high growth industry on a par with the European microelectronics sector ⁽⁷⁴⁾.

The Photonics21 ETP was established to foster more cooperation and a common identity in this industrial sector, which is otherwise very fragmented. The platform

⁽⁷⁴⁾ <http://photonics21.org>

gathers the majority of the leading photonics industries and relevant R & D stakeholders along the whole economic value chain throughout Europe. Its objective is to establish Europe as a leader in the development and deployment of photonics in five key industrial areas (information and communication, lighting and displays, manufacturing, life sciences, and security) as well as in education and training.

Strategic research agenda

Telecommunications and manufacturing have traditionally been the industrial areas where photonics played a role. But photonics is increasingly driving innovation in many other application areas. The SRA identifies these application areas and for each of them the key technologies and the research topics which are a priority for European photonics.

These are grouped into five application sectors: information and communication; industrial production and manufacturing and quality; life sciences and health; lighting and displays; security, metrology and sensors. Additionally two cross-cutting topics have also been defined: design and manufacturing of photonic components and systems, and photonics education, training and research infrastructure.

In addition, the SRA makes a number of recommendations:

- increased public and private investment in photonics research;
- greater cooperation and coordination between national and European research programmes;
- stronger links between the photonics industry, research institutions and academia;
- identifying the existing and potential market of photonics in different sectors as a means to direct research strategies.

Update on platform activities

Photonics21 membership exceeds 1 000 individual members coming from 43 different countries, partly in response to the political recognition of the sector derived from the economic impact report 'Photonics in Europe', published in December 2007. The report confirmed the importance of the European photonics industry in terms of global market share and growth potential ⁽⁷⁵⁾.

The Secretariat activities, initially carried out on a voluntary basis, have been supported since mid-2008 by the EC project Phorce 21 under the seventh framework programme.

Over the year 2008 Photonics21 has cooperated actively with the ETPs ARTEMIS, eMOBILITY, ENIAC, EPOSS, ERTRAC, eSAFETY, EUROP, ISI, *Manufuture*, NEM and NESSI.

Following the establishment of a number of national platforms, a Photonics21 Mirror Group was set up to develop a stronger partnership between the Member States and better coordinate European and national funding strategies. The group brings

⁽⁷⁵⁾ http://www.photonics21.org/pdf/Brosch_Photonics_Europe.pdf

together representatives of national funding bodies of 15 European countries and met five times during the past year.

An important outcome of the work of this group was an agreement to proceed with a joint funding activity — called ERA-NET Plus — by creating a common pot of money to fund research (of which two thirds will come from participating States and one third from the EU). The main areas under discussion for future funding under this activity are next generation broadband and bio-photonics.

Photonics21 has also been active in the field of international research cooperation. In order to strengthen cooperation between the European Union and Russia, which has world-leading researchers in the area of photonics and modern optics, the platform, in cooperation with the European Commission, organised a matchmaking event with 60 European and Russian experts to identify partners for FP7 photonics projects, which resulted in the definition of 10 possible joint projects.

Next to the annual updating of the SRA, 2007 saw a number of other important developments that helped to raise the profile of the platform. Firstly, Photonics21 was given a high profile in the seventh framework programme resulting in a 40 % increase of research funding, which will reach EUR 90 million for 2007–08. Moreover, the European Commission established a dedicated photonics unit in the Information Society and Media DG.

Next steps

Photonics21 TP will focus on the following key areas.

For the period 2008–11, the EU granted funding to the Phorce21 project (Photonics Research Coordination Europe — Photonics21), which aims at:

- stimulating cooperation at European and national level, and increasing the involvement of central and eastern European countries in European photonics research;
- providing a constantly updated common European SRA in photonics, fostering the strategic link between the photonics industry and research, and improving transparency;
- improving third-level educational programmes at European and regional level, and raising awareness and generating interest by students in photonics;
- providing a central information platform to the photonics community in Europe and making the general public aware of the overall impact of photonics on Europe's economy and society.

Specifically in the area of education the platform aims to bring together scientists and company representatives to align photonics education with industry needs, and initiate cooperative structures between companies and educational institutions.

In terms of membership, more energy will be devoted to increasing the number of members from new Member States. More attention will also be given to improving internal communication, fostering a more proactive leadership and strengthening the

external dissemination of information through upgrading of the website and the newsletter.

Finally, the platform will continue its discussions about the future development and financing of its activities. Apart from the development of the ERA-NET Plus activity, platform members will explore the possibility of proposing a public–private partnership. They will also look into the possibilities offered by Article 169 of the EC Treaty, which allows the participation of the Community in the joint implementation of national programmes.

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July 2005

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Vision document — 2005

'A vision for photovoltaic solar energy technology'

<http://www.eupvplatform.org/fileadmin/Documents/vision-report-final.pdf>

Strategic research agenda — 2007

'A strategic research agenda for photovoltaic solar energy conversion technology'

http://www.eupvplatform.org/fileadmin/Documents/PVPT_SRA_Complet_070604.pdf

Implementation action plan — to be published soon

European Photovoltaic Technology Platform

A strong photovoltaic (PV) energy sector does not only mean reduced CO₂ but also sustainable economic growth, reduced energy import dependence, high quality jobs, technology development, global competitiveness, and European industrial and research leadership.

After a slow start, the worldwide PV market has been growing at an average annual rate of approximately 50 % over the past five years, with a turnover of around EUR 10 billion in 2007. Cumulative worldwide installations were estimated at 9.5 GW by the end of 2007, with Europe standing at 4.5 GW. The European PV solar cells production in 2007 reached 1.063 MW, up 56 % over 2006, which represents approximately 30 % of the worldwide photovoltaic production, resulting in around 40 000 direct jobs in Germany alone ⁽⁷⁶⁾.

PV has huge potential and is indispensable for a longer-term sustainable energy future, but still needs some further development to reach full economic maturity. The EU Photovoltaic Technology Platform aims at mobilising a wide range of

⁽⁷⁶⁾ Source: <http://www.eupvplatform.org>

stakeholders on a European level to contribute to the further development of PV solar energy into a competitive technology that can be applied on a large scale and to the strengthening of the position of the European PV industry.

Strategic research agenda

The SRA, published in 2007, is the roadmap for the Photovoltaic Platform to achieve its vision. The overall aim of short-term research is for the price of PV electricity to be comparable to the retail price of electricity for small consumers in southern Europe by 2015. Continued price reduction after 2015 implies that this situation will apply to most of Europe by 2020. In the longer term, PV technology is expected to become competitive with all major electricity generating technologies, especially in terms of total costs (e.g. for CO₂ storage).

The SRA is based on a number of basic principles including:

- short-term research should be fully dedicated to the competitiveness of European industry, ensuring leadership through rapid innovation and high production volumes in the next decade;
- the SRA does not exclude technologies but sets overall targets that each PV format must reach, and describes the research priorities for each format in order to meet the targets;
- public money is needed to fund short, medium and long-term research into all parts of the value chain, as well as research into socioeconomic issues.

The SRA contains a range of tables outlining short/medium and long-term research priorities for the categories 'Industry manufacturing aspects', 'Applied/advanced technology aspects' and 'Basic research and fundamentals' covering the following areas:

- cells and modules:
 - topics common to all technologies,
 - wafer-based crystalline silicon technology,
 - existing thin-film technologies,
 - emerging and novel technologies;
- concentrator technologies:
 - materials and components,
 - devices and efficiency,
 - manufacturing and installation;
- balance-of-system components and PV systems;
- standards, quality assurance, safety and environmental aspects;
- socioeconomic aspects and enabling research.

Update on platform activities

Until 2009, the Secretariat activities will be partly funded by the sixth framework programme and partly by the European Photovoltaic Industry Association (EPIA).

The number of countries in the Mirror Group has reached 25, providing an excellent interface between the activities of the platform and the public authorities responsible for PV research and dissemination programmes in the EU Member States. The

platform also developed a so-called barrier questionnaire to investigate the situation in each Member State.

The platform actively encouraged and supported the establishment of national platforms. They exist in Spain, France, Austria and Slovenia, and are in preparation in many other countries.

The European Photovoltaic TP has reinforced its existing links with the European Construction TP, the Hydrogen TP (now a JTI) and the Sustainable Chemistry TP. It also intends to contribute actively, in particular, to the 'Third Industrial Revolution' initiative.

Other activities have included:

- the launch of a newsletter in June 2008, with an overview of the activities carried out by the different working groups;
- a partnership with MTV resulting in the 'EU PV Youth Campaign', which will run for several months, including TV spots and an integration into the MTV website;
- the development of a leaflet addressed to architects to familiarise them with solar architecture;
- the realisation of photovoltaic education posters for schools;
- the development of a concept for training courses in partnership with universities (e.g. via e-learning mode) and, at present, an overview on courses or studies in PV in Europe is being developed.

The platform organised a number of events, including two in the context of the yearly Sustainable Energy Week;

- 'New rising era for photovoltaic integration in building' in February 2007, with the aim of linking the EU Photovoltaic Technology Platform activities related to building integration with those of the European Construction Technology Platform;
- 'Photovoltaic solar energy: the way forward' in January 2008, with the aim of presenting the progress of the platform and to take stock of the various ongoing research developments.

In cooperation with the Slovenian EU Presidency, the EU Photovoltaic Technology Platform held its third General Assembly on 6 June 2008 in Ljubljana with the aim of assessing results and providing recommendations on the European Strategic Energy Technology Plan (SET Plan). This plan sets a new agenda for energy research and innovation in Europe, with the core objective being to speed up the progress of low-carbon energy technologies beyond a business-as-usual scenario.

Next steps

The Photovoltaic Technology Platform will contribute to the overall SET Plan, preparing concrete proposals for one of the initiatives announced by the European Commission in the framework of the SET Plan: the 'Solar Europe Initiative' ⁽⁷⁷⁾.

⁽⁷⁷⁾ http://ec.europa.eu/commission_barroso/potocnik/news/docs/20080606_speech_photovoltaic.pdf

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Vision document — April 2006

http://ec.europa.eu/research/energy/pdf/smartgrids_en.pdf

Strategic research agenda — February 2007

http://www.smartgrids.eu/documents/sra/sra_finalversion.pdf

Strategic deployment document — September 2008

http://www.smartgrids.eu/documents/3rdGA/SmartGrids_SDD_Draft_25_sept_2008.zip

European Technology Platform for Electricity Networks of the Future (SmartGrids)

Europe's electricity networks have provided the vital links between electricity producers and consumers for many decades and still continue to do so. Europe's electric power system is one of the largest technical systems in the world serving 430 million people, with 230 000 km of transmission lines at the highest voltage levels of between 220 kV and 400 kV and 5 000 000 km of distribution lines at medium and low voltage levels. With all the stations, support systems, etc., the investment in European electricity grids until now exceeds EUR 600 billion (some EUR 1 500 per citizen).

A significant proportion of the European electricity grids were built over 40 years ago. Renewal is necessary and is already happening — according to the International Energy Agency; approximately EUR 500 billion will be invested by 2030. But renewal cannot be seen as a mere replacement based on old solutions and existing technologies: it needs to deploy new 'smart' technologies and solutions, facilitating distributed generation and storage and making the most out of the potential for efficiency gains.

The electricity networks of the future will have not only to accommodate large-scale distributed generation and enable widespread use of renewable energy sources, but

also facilitate the connection of large scale centralised generation at suitable locations (e.g. close to the coast to get access to cooling water). Moreover, massive electrification of transportation vehicles (both, public and private), customer-centric and service-oriented electricity supply must be supported.

The European Technology Platform for SmartGrids was set up in 2005 to create a joint vision for the European electricity networks of 2020 and beyond. The platform includes representatives from industry, transmission and distribution system operators, research bodies and regulators. It has identified clear objectives and proposes an ambitious strategy for the benefits of Europe and its electricity customers.

Strategic research agenda

Based on contributions from four working groups that represent a wide range of European industrial and academic expertise, as well as input from Member State governments, the SmartGrids SRA proposes a framework for a future research programme with the following goals:

- ensure that Europe's electricity networks develop in such a way that enhances Europe's competitive position while supporting sustainability objectives;
- capture the benefits of collaboration and cooperation in addressing challenges shared by all Member States;
- provide a clear framework, goals and objectives on which the research community can focus, encouraging innovative solutions where this will add value;
- generate the momentum and support necessary.

A key principle in the development of this SRA is that grid users should be at the focus of developments. To achieve this, the work has taken an integrated approach to technical, commercial and regulatory aspects. The structure of the SRA is based on five primary research areas:

- (1) smart distribution infrastructure (small customers and network design);
- (2) smart operation, energy flows and customer adaptation (small customers and networks);
- (3) SmartGrid assets and asset management (transmission and distribution);
- (4) European interoperability of SmartGrids (transmission and distribution);
- (5) SmartGrids' cross-cutting issues and catalysts.

Subsequently, the SRA identifies for each of the research areas potential catalyst projects that will, in parallel with the main research activities, address anticipated barriers to widespread adoption of particular research projects.

Furthermore, the SRA foresees the development of so-called lighthouse projects, aimed at validating innovative solutions in an appropriate environment and become proven for widespread adoption.

Strategic deployment document

With the SmartGrids vision and SRA complete, a plan for deployment to make the vision a reality was required. Hence, the strategic deployment document delivers a clear timeline of actions, recommendations and conclusions, taking into account EU climate targets and the need to maintain supply. The SDD is also consistent with the Strategic Energy Technology (SET) Plan for Europe.

The SmartGrids ETP has included the views and recommendations of a wide range of experts and knowledgeable participants who contribute through four working groups (WG1 Network Assets, WG2 Network Operations, WG3 Demand and Metering and WG4 Generation and Storage) and finally sought validation via General Assembly meetings. However, the Advisory Council has no executive authority in its own right and therefore presents the recommendations for consideration and action by the relevant parties.

The SmartGrids Platform seeks therefore to inform, advice and inspire those involved with the challenges ahead. It is committed to provide analysis, facilitation and information.

Update on platform activities

The platform currently counts over 200 members. It is steered and monitored by an Advisory Council (AC), assisted by an Executive Group and a Secretariat. Four working groups (Network Asset, Network Operations, Demand and Metering, Generation and Storage) are developing concrete action programmes to implement the vision. There is also a Mirror Group, which currently includes representatives from 22 Members States. All members come together at least every year on the occasion of the General Assembly.

National platforms have been created in Spain and Austria and have a strong relationship with the ETP, through both the synchronisation of the Secretariat's activities and the participation of their members in the SmartGrids ETP Advisory Council.

Contacts with others platforms have been pursued through the active participation of SmartGrids members in the Advisory Council of related platforms.

It is worth mentioning the ERA-NET project on SmartGrids. Following the call published by the European Commission at the end of 2006 for a SmartGrid ERA-NET, a project on SmartGrids has been recently started on September 2008. Nineteen partners, from 11 different countries, are cooperating on the project. The total budget for the SmartGrid ERA-NET amounts to EUR 2.45 million.

Communication actions have included the organisation of the second General Assembly (November 2007) and third General Assembly (October 2008) and the development of a website, including a section for submitting project ideas. A video to disseminate the concept of the ETP vision for the future was also released in 2007.

The implementation of the SRA has continued through the following actions:

- the influence on RELIANCE, a project on sustainable energy systems, funded by the EU under the sixth framework programme, started in 2005 and resulted in the development of a research infrastructure;
- the definition of its strategy deployment document (SDD) structured in six deployment priorities:
 - optimising grid operation and use;
 - optimising grid infrastructure;
 - integrating large-scale intermittent generation;
 - information and communication technology;
 - active distribution networks;
 - new marketplaces, users and energy efficiency.

Next steps

The platform will discuss possible amendments to its deployment document, after simulation and analysis of different scenarios, and will reflect on possible changes to the platform structure in order to enter more effectively the deployment phase.

Launch

March 2005

Website

<http://www.etpsmr.org>

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Vision document — March 2005

<http://www.etpsmr.org>

Strategic research agenda — first edition, March 2006 — second edition, December 2007

<http://www.etpsmr.org>

Implementation action plan — December 2007

<http://www.etpsmr.org>

European Platform on Sustainable Mineral Resources (ETP SMR)

Mineral resources are crucial for the competitiveness and innovation of the European economy. The minerals industry, comprising producers and users of industrial minerals and metals, aggregates and ornamental or dimensional stone, oil, gas and derivatives, as well as coal and by-products, provides vital inputs to Europe's economy and social well-being. Because of their great diversity, minerals and their derived products are necessary for almost every aspect of life.

Major end-users of mineral raw materials are the construction, chemicals, automotive, aerospace, machinery and equipment sectors, providing a total added-value of EUR 1 324 billion and employment to about 30 million people. These

important sectors of the EU economy are critically dependent on these raw materials, and high prices or bottlenecks in their supply can jeopardise the sectors' competitive position. Therefore, securing access to raw materials is an important factor for the EU's competitiveness and, hence, crucial to achieve the objectives of the EU's growth and jobs strategy.

The European Technology Platform on Sustainable Mineral Resources (ETP SMR) unites hundreds of stakeholders from industry, the research community, public authorities, the financial community, regulators, consumers and civil society around the major technological challenges to the sector, in order to jointly develop a common vision. The platform will contribute to strengthening one of the fundamental pillars of the European economy and society: the European minerals industries. These include oil, gas, coal, metal ores, industrial minerals, ornamental stones, aggregates, smelters as well as technology suppliers and engineering companies.

The ETP SMR has the following objectives:

- securing the future supply of/access to European raw materials;
- supporting the revival of exploration of Europe's mineral potential;
- developing innovative and sustainable production technologies;
- implementing best practices;
- reuse, recovery and recycling as well as new product applications;
- creating European added value through RTD-based technology leadership, education and training.

Strategic research agenda

The research objectives are to be implemented in five focus areas, corresponding to the working groups. They cover the value chain of raw materials, extending from exploration and extraction, mineral processing to mineral products ready for use in the downstream industry, addressing also reuse, recycling, and horizontal issues.

The priority project areas are as follows.

- The scope of exploration is to secure the long-term supply of minerals to Europe, by new exploration technologies and by building a knowledge base of Europe's mineral resources.
- Different extraction and processing methods are needed depending on the type of mineral resource and the desired products and, therefore, require a different RTD focus. Common points are process and extraction efficiency, the significant reduction of energy consumption, and developments toward zero environmental impact.
- New methods for rapid and effective rehabilitation are required to reduce the environmental consequences of an extraction site after closure.
- The common goal concerning reuse and recycling is to ensure that by 2030 Europe has a recycling industry as a natural, integrated part of its mineral industry.
- The future demands new application areas for mineral products, the design of new mineral products, and the creation of new mineral product functionality, through an enhanced understanding of customer needs.

- A well-functioning interaction between industry and society is crucial for a sustainable industry. It is necessary to enhance the positive attitude of society towards minerals consumption and the activities of the mineral industry and its technological development.

All the main research topics identified have a definite short, medium or long-term time horizons. This enables the definition of projects common to each of the mineral industry sectors involved in the ETP SMR and clearly addresses the basic needs of the whole minerals industry. Some initial projects have already been identified.

Update on platform activities

The structure of the platform has remained unchanged. The Stakeholder Forum consists of all interested parties of the sectors involved. The platform is steered by the High Level Group, from which a Steering Committee has been elected to oversee the daily management of the platform. The Secretariat is run by the Council (EMiReC, the European Mineral Resources RTD Council).

The work of the platform was financed by industry and other organisations through the EMiReC (European Mineral Resources RTD Council), and actively supported by stakeholders organised in focus areas.

The platform also interfaces with a Mirror Group, consisting of representatives of Member States. The platform actively encourages and supports national initiatives in the area of mineral resources. Particularly in Poland and Sweden, the Member States programmes are very supportive and the industry has signed special cooperation agreements.

The global character of the mineral sector offers natural opportunities for international cooperation, particularly with Russia and with countries of Africa and Latin America.

As regards cooperation with other platforms, SMR works on developing linkages with a number of other ETPs, particularly SusChem, Waterborne, eMobility, ESTP, ESTEP, *Manufuture*, ECTP, EuMaT, and the Industrial Safety ETP.

Regarding communication activities, SMR organised two stakeholder events in June and September 2007 in Brussels. A brokerage event with other platforms was organised in Poland in June 2008.

SMR published the first version of its implementation plan in December 2007 with a focus on framework conditions (policy, capacity-building, public acceptance) for innovation in the European minerals industries.

Next steps

Having updated its SRA, the ETP is currently revising its implementation plan with regards to completed work, ongoing priorities and new priorities that have emerged over time.

The platform will continue to play an important role in improving the collaboration between various Member States, supporting the evolving policies/strategies in sustainable mineral resource management, and securing the future supply of mineral resources through innovation and new technologies.

Launch

21 September 2007

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Vision document — 2007

Link available on home page: <http://www.snetp.eu>

Strategic research agenda — 2009

Published in draft as part of the Web consultation following the General Assembly on 26 November 2008. Final SRA to be published in 2009.

Deployment strategy — 2009

To be published shortly after the SRA

Implementation action plan

Publication foreseen for 2009–10

Sustainable Nuclear Energy Technology Platform (SNE-TP)

SNE-TP is promoting the closer integration between European researchers and industry through the definition and implementation of a strategic research agenda (SRA) and corresponding deployment strategy in the field of nuclear systems and safety. The primary aim is to ensure a more efficient and effective strategic approach to the carrying out of R & D in this field, thereby maintaining Europe's R & D leadership in the nuclear research sector and providing a firm basis for a continued and ultimately more sustainable exploitation of nuclear energy while ensuring a high level of nuclear safety. In particular, these actions can be regarded as the contribution to the EU's Strategic Energy Technology Plan (SET Plan — 'Towards a low-carbon future', COM(2007) 723, 22 November 2007) aiming to develop research, development and innovation in all low-carbon technologies as a prerequisite to meet the EU's ambitious long-term energy policy objectives.

The key technical role of SNE-TP in this respect should also be viewed in relation to the setting up, also in the autumn of 2007, of the High Level Group on nuclear safety and radioactive waste (comprising heads of EU regulatory bodies) and of the European Nuclear Energy Forum (a broad-based stakeholder forum dealing with socio-political and economic issues). In this context, SNE-TP further endorses

nuclear energy's role in the EU's energy mix, especially the tackling of problems such as security of supply and climate change, and is providing a technical science-based forum to complement the other two initiatives. More information on these other initiatives is available online (<http://www.snetp.eu>).

The vision report, which was compiled with the support of more than 40 members from industry, research institutes, technical safety organisations, and others, details the special contribution made by nuclear energy in ensuring security of energy supply, promoting competitiveness and fighting climate change. It also provides a roadmap for the creation of the SRA, highlighting the need to maintain the safety and competitiveness of existing installations, which contribute today to more than 30 % of the electricity production in the EU, and to start the development of generation-IV reactors, advanced recycling processes and the production of alternative fuels in order to progress towards increased sustainability of nuclear energy. The report also stresses the need for increased resources for education and training in nuclear science and engineering, today viewed as one of the key issues to be addressed in order to ensure the ambitious objectives of SNE-TP and the sector as a whole can be achieved.

Strategic research agenda

The SRA is organised around five 'systems' chapters and additional cross-cutting topics:

- current and future light water reactors;
- advanced fuel cycles for waste minimisation and resource optimisation;
- generation-IV fast spectrum reactors (in particular the sodium fast reactor, lead fast reactor, gas fast reactor) and accelerator-driven systems for dedicated 'waste burning';
- high temperature reactors and other applications of nuclear energy (i.e. heat production for industrial processes and applications);
- new nuclear large research infrastructures.

Cross-cutting topics include:

- safety,
- materials,
- pre-normative research,
- modelling and simulation.

In each of the themes a number of recommendations are made for research priorities.

Update on platform activities

The initial governance structure of SNE-TP was established in October 2007, shortly following the formal launch. The Governing Board and the Executive Committee have a balanced representation of industrial and research organisations. The Governing Board meets twice a year, the Executive Committee four times a year. The final

organisation and structure of the platform is described in a document available on the platform's website.

In addition, three working groups have been established: one for the drafting of the SRA, one for the deployment strategy, and one covering education, training and knowledge-management. A further working group on funding and financing will also be established, and one on international cooperation is also envisaged. An important link has been made with the European Technical Safety Organisations Network (ETSON). The membership of the platform has grown steadily since the launch, and one year on has reached some 60 organisations from 18 European countries, representing all key nuclear research and industrial stakeholders.

The SRA and associated deployment strategy will be published in draft form early in 2009 and posted on the platform's website for comments. The final versions will be published during the first half of 2009.

The platform held its first General Assembly, open to all, on 26 November 2008, at which the SRA was presented.

Next steps

Once the SRA is finalised, SNE-TP will start to establish smaller ad hoc groups of members interested in specific areas of research as part of the process of SRA implementation. For example, a task force has already been established to develop further the nuclear European Industrial Initiative (EII) of the SET Plan (EII on 'sustainable nuclear fission' involving development of generation-IV fast reactors and closed fuel cycles). This EII will concentrate on the design and construction of demonstrators and prototype reactors and pilot fuel cycle facilities, so as to prove the technical feasibility and economic viability of these technologies. Crucially, SNE-TP, via its working group on funding and financing, will have to elaborate innovative ways to fund and finance this initiative and all other aspects of the platform's operations.

SNE-TP will also work on setting up a Member States' Mirror Group.

Launch

June 2004

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Vision document — 2005

‘The vision for 2025 and beyond’

[http://www.suschem.org/content.php?_document\[ID\]=2049&pagelId=3599](http://www.suschem.org/content.php?_document[ID]=2049&pagelId=3599)

Strategic research agenda — 2005

[http://www.suschem.org/content.php?_document\[ID\]=2049&pagelId=3599](http://www.suschem.org/content.php?_document[ID]=2049&pagelId=3599)

Implementation action plan — 2006

[http://www.suschem.org/content.php?_document\[ID\]=2049&pagelId=3599](http://www.suschem.org/content.php?_document[ID]=2049&pagelId=3599)

European Technology Platform for Sustainable Chemistry (SusChem)

With chemicals sales of EUR 580 billion out of an estimated world market of EUR 1 736 billion in 2004, the EU-25 is the leading chemical production area in the world. The European chemical industry employs around two million workers and comprises about 27 000 enterprises (excluding pharmaceutical companies), 98 % of which have fewer than 500 employees and can be considered small or medium-sized enterprises⁽⁷⁸⁾. The main challenges for the European chemistry sector are its relatively high production costs, low market growth, delocalisation of customer industries and decreasing expenditure on research.

The European Technology Platform for Sustainable Chemistry consists of a network of strategic and intellectual alliances that bridge academia, industry and relevant additional partners, in a real partnership to enable the development of a shared vision. Its aim is to maintain and strengthen the competitiveness and sustainability of the chemical industry in Europe based on technology leadership; to boost and sustain chemistry research in Europe; and to improve EU framework conditions conducive to chemical innovation.

⁽⁷⁸⁾ <http://www.suschem.org>

Strategic research agenda

The ETP for Sustainable Chemistry has prepared a strategic research agenda which outlines the future priorities for European research efforts as perceived by its stakeholders. The document comprises the contributions from four working groups, which had the task of identifying key areas of research, describing the limitations and hurdles faced by researchers, and proposing changes to future activities where necessary.

The core of the SRA focuses on research needs in four sections:

- industrial biotechnologies, focusing on the development and production of novel, innovative products and processes in a cost and eco-efficient manner, and the discovery and optimisation of strains and biocatalysts;
- materials technology, focusing on materials for mankind's future surroundings, which will be designed to enhance the quality of life, with special attention to the role of nanoscience, and the related nanotechnologies;
- reaction and process design, focusing on the identification, design and development of appropriate products and processes that will help achieving them;
- horizontal issues, focusing on ensuring that EU citizens benefit from the development and use of innovations based on the SusChem SRA by addressing environmental, health and societal concerns associated with new products and processes; and stimulating support for innovation.

A clear interdisciplinary approach of the three technology areas, supported by horizontal measures is needed for a successful implementation of the SRA.

Update on platform activities

The structure of the platform was modified from a purely technology driven focus to more of an implementation focus. The technology groups were bundled in the RDI group. Following the advice of the High Level Group on the Competitiveness of the European Chemicals Industry, new changes will be shortly introduced for reinforcing the work of the platform in the innovation area.

Regarding the funding of the Secretariat, originally it was almost exclusively financed through two grants from the sixth framework programme; now (while one of these grants is still ongoing) the Secretariat partners have agreed to finance the activities of the Secretariat themselves, through personnel time that is provided to the platform and through a common budget for meetings, publications, studies, etc.

SusChem has supported the creation of national platforms by taking part in meetings and providing materials. Moreover, a meeting was organised between existing and potential national platforms to share best practices. A set of minimum guidelines that national platforms need to fulfil before they can carry the SusChem logo was elaborated.

National and regional governments are represented in the Member States' Mirror Group, which plays an important role in the SusChem structure. The ECRN

(European Chemical Regions Network; a network of governments from regions with important chemical industry) is also applying for a new European project financed with structural funds to support a regional SusChem dimension in close cooperation with SusChem.

SusChem is actively participating in the Knowledge-Based Bio-Economy (KBBE) network of platforms (with close links to Biofuels, Forestry and Plants for the Future)⁽⁷⁹⁾. It also worked together with several platforms in the area of 'energy efficient buildings'. This collaboration has led to a common proposal for a lead market pilot action on 'sustainable construction'⁽⁸⁰⁾.

SusChem has also met with other platforms to discuss common interests: Advanced Engineering Materials and Technologies (EuMaT), Nanomedicine, Water Supply and Sanitation, and Photonics21.

The platform is also following the developments regarding the 'Third industrial revolution' initiative⁽⁸¹⁾.

The platform held its annual national platform meeting in September 2008 in Turin (Italy), where representatives of existing and prospective national technology platforms met to exchange best practices. This meeting was organised in conjunction with the second EuCheMS, the European Chemical Congress.

SusChem's seventh stakeholder event took place in Prague in February 2009, as a part of the programme of the Czech EU Presidency.

Furthermore, SusChem has finalised its implementation action plan. While the SRA focuses on topics and themes, the implementation action plan focuses on activities and actions. Priorities are organised around eight themes of major importance for sustainable chemistry: bio-based economy, energy, healthcare, information and communication technologies, nanotechnologies, sustainable quality of life, sustainable product and process design and transport. The deployment strategy is part of the implementation plan.

The implementation action plan focuses as well on three visionary projects, namely: (a) the Smart Energy Home; (b) the Integrated Biorefinery; (c) the F³ Factory (fast, flexible, future). All three projects run independently. The Smart Energy Home has already generated an important agreement among five leading enterprises for its deployment. The Integrated Biorefinery will look for support in the coming joint call on Integrated Biorefineries that is being launched by the Commission, where industrial participation is considered an asset for applicants.

SusChem also developed an online education database, which contains information about educational programmes and activities in the field of sustainable chemistry within the European Union. It provides concise information for those who want to learn more about existing and planned activities in the field of sustainable chemistry and can be used as a tool to promote new collaborative activities.

⁽⁷⁹⁾ http://ec.europa.eu/research/biosociety/kbbe/kbbe_en.htm

⁽⁸⁰⁾ http://ec.europa.eu/enterprise/leadmarket/sustainable_construction.htm

⁽⁸¹⁾ <http://www.euractiv.com/en/energy/interview-third-industrial-revolution-nigh/article-170003>

Another horizontal initiative is a project that will focus on the innovative partnership for the chemical and downstream sectors, in the lead market segment of bio-based products. This project is planned to be submitted to the upcoming call of Europe INNOVA.

Next steps

The platform will update its implementation plan and will continue providing suggestions to FP7 work programmes.

SusChem will start implementing the recommendation of the High Level Group on the Competitiveness of the European Chemicals Industry to strengthen its work on innovation. It is expected that this evolution will have an impact on the structure of the platform, in order to include activities beyond R & D.

Regarding national platforms, the aim is to reinforce the existing network and expand it to other countries. Discussions are also ongoing with Eureka to possibly set up a Eureka cluster or umbrella in the area of sustainable chemistry. The platform will continue its networking with ERA-NETs and with ECRN.

SusChem also intends to expand the recently established education website, which currently covers Belgium, Germany, Ireland, Spain, France, Italy, the Netherlands, Finland, and the United Kingdom, to all Member States.

Launch

October 2006

Website

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Vision document — 2006

‘Wind energy: A vision for Europe in 2030’

http://www.windplatform.eu/fileadmin/ewetp_docs/Structure/061003Vision_final.pdf

Strategic research agenda — 2005

‘Prioritising wind energy in Europe’

http://www.windplatform.eu/fileadmin/ewetp_docs/Structure/SRA_final.pdf

Strategic research agenda and market deployment strategy from 2008 to 2030 — Synopsis

http://www.windplatform.eu/fileadmin/ewetp_docs/Bibliography/Synopsis_2008.pdf

Strategic research agenda and market deployment strategy from 2008 to 2030 — 2008

http://www.windplatform.eu/fileadmin/ewetp_docs/Bibliography/SRA_MDS_July_2008.pdf

European Wind Energy Technology Platform (TPWind)

The European energy market is driven by a growing number of factors, ranging from the impacts of climate change, the depletion of oil and gas, the high costs and the unpredictable supply of fuel, and the price of CO₂ allowances. A strong wind energy sector does not only mean reduced CO₂, cleaner air, and secure biodiversity but also sustainable economic growth, reduced dependence on energy imports, high quality jobs, technological development, global competitiveness and European industrial and research leadership.

Today, Europe leads the world in terms of manufacturing and developing wind farms. In 1994 there were 1 683 megawatts (MW) of wind energy installed across the EU. By the end of 2007, installed capacity had increased 24 times and some 57 gigawatts (GW) of cumulative installed capacity were providing about 3.7 % of European

electricity consumption. European companies are world leaders in the manufacturing of wind turbines and their components. Six of the top 10 turbine manufacturing companies are based in Europe. In 2007 they accounted for 67 % of the global market ⁽⁸²⁾.

Europe's lead has decreased in recent years as other regions of the world are discovering the economic potential of the technology. One of the major challenges facing the European wind sector is to ensure sufficient support for fundamental, long-term R & D to avoid the loss of one of the key energy technology growth areas in Europe today.

Therefore, transforming wind energy into a major, reliable and cost competitive energy source by 2030 is the main objective of the European Wind Energy Technology Platform. Bringing together policymakers and industry stakeholders, the TPWind's tasks are to identify and prioritise areas for increased innovation and new and existing research and development tasks.

Strategic research agenda

The TPWind's strategic research agenda and market deployment strategy (SRA/MDS) represents the most in-depth analysis to date of the research requirements of the wind energy sector and is based on two years of work and discussions. According to the SRA, wind energy could cover 12–14 % of the EU's electricity consumption by 2020, with a total installed capacity of 180 GW. This could increase to 22–28 % of consumption and 300 GW in 2030. Fulfilling this vision will be a major industrial and technological challenge for Europe. Therefore public and private research resources must be mobilised via the coordination of investment at European and national level.

The SRA can be considered a roadmap showing wind energy research and development milestones towards increased wind power penetration in Europe. It is divided into five thematic priorities for research:

- wind resources, design wind conditions and forecasting,
- wind turbine technology,
- wind energy integration,
- offshore deployment and operation,
- European research infrastructures.

These thematic priorities are supported by research topics, which are subsequently divided into research priorities and research actions. In order to implement the SRA and enable the large-scale deployment of wind energy, the support of a stable and well-defined market, policy and regulatory environments is essential. In the market deployment strategy, the following areas are considered:

- enabling market deployment,
- cost reduction,
- adapting policies,
- optimising administrative procedures,
- integrating wind into the natural environment,

⁽⁸²⁾ Source: BTM Consult ApS.

- ensuring public support.

Update on platform activities

TPWind, which was set up in 2006, has 150 wind energy expert members divided into different working groups. The platform is made up of a Steering Committee, a Member States' Mirror Group, a Finance Working Group, Policy/Market and Technology Working Groups and a Secretariat. The Secretariat is largely financed through a specific support action of the sixth framework programme, with a contribution from private resources.

A regular exchange of information has taken place with the 20 members of the platform's Mirror Group, which met twice in 2008. Moreover the platform has extensive contacts with national platforms in Denmark and Spain.

TPWind has regular contacts with the Steel Technology Platform, SmartGrids, and the Hydrogen Joint Undertaking. TPWind participated in December 2007 with 13 other ETPs in a meeting aimed at creating a 'Third Industrial Revolution' economic game plan and roadmap, with the mission of achieving the European Union benchmarks of a 20 % increase in energy efficiency, a 20 % reduction of global warming gases and a 20 % increase in renewable energy.

Following the decisions taken on that occasion, the platform agreed on the principle to join a Third Industrial Revolution Working Group with the purpose of exploring possible synergies, sharing best practices and creating a comprehensive plan that could link up R & D across different industry sectors.

In 2007 and 2008, TPWind organised two workshops during the European Wind Energy Conference. On this occasion, TPWind published the *Synopsis* document, announcing the strategic research agenda publication.

During the two TPWind General Assemblies, the Technology/R & D Working Groups have been active in developing the SRA, while the Policy/Market Development Working Groups developed the market development strategy (MDS). The final version of the strategic research agenda and market deployment strategy was released on 25 July 2008.

In October 2008 the third TPWind General Assembly took place. The event focused on the concrete implementation of TPWind's strategic research agenda. Leaders of the European Wind Integration Study (EWIS) presented their interim results. The meeting, open only to TPWind members, was followed by a public workshop organised by the UpWind project partners (Upwind is a European project funded under the EU's sixth framework programme) ⁽⁸³⁾.

Next steps

The platform will focus on implementing the priorities outlined in the strategic research agenda through a number of specific activities, including:

⁽⁸³⁾ <http://www.upwind.eu/default.aspx>

- advertising new calls for proposals for energy under the seventh framework programme which were published early September 2008;
- contributing to the SET Plan (European Strategic Energy Technology Plan) ⁽⁸⁴⁾;
- contributing to national R & D programmes.

⁽⁸⁴⁾ http://ec.europa.eu/energy/res/setplan/communication_2007_en.htm

Launch

January 2005

Website

<http://www.waterborne-tp.org>

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Vision document — 2005

'The Waterborne sector: a key asset for Europe's development and future'

http://www.waterborne-tp.org/bal_ims_controler.php?menu=NjFkPzkyaWA+MWQxM2phMA===&reset=search&page=1

Strategic research agenda — 2006

'Key for Europe's development and future'

http://www.waterborne-tp.org/bal_ims_controler.php?menu=NjFkPzkyaWA+MWQxM2phMA===&reset=search&page=1

Implementation action plan — 2008

'The Waterborne implementation route map 2007'

http://www.waterbortp.org/bal_ims_controler.php?menu=MzQ3bG9kPjc9Mj9qM2pmNw===&page=1&reset=search

European Technology Platform Waterborne

The history of civilisation and commerce cannot be separated from waterborne transport. Trade of goods, travelling, exchange of knowledge, and the development of cities, regions and even civilisations, were in past centuries often only possible by means of waterborne transport.

Europe has always been a maritime superpower and modern Europe would not be one of the world's most powerful regions without the performance of waterborne transport and operations, with world leaders in shipping, shipbuilding, marine equipment manufacturing and offshore services, following a continuous flow of innovations resulting from investments in a wide array of advanced R & D.

About three million people work directly in the European waterborne sectors generating a turnover of about EUR 200 billion with an added value totalling about EUR 90 billion (> 1 % of EU's GDP). About 90 % of the external trade and more than 40 % of internal trade in the EU are waterborne (amounting to a transport volume of 14 thousand billion ton km, roughly 85 % of the sum of road and rail transport). More than 25 billion passenger km per year are provided by means of waterborne operations. The European ship systems and equipment suppliers' products are highly requested on the world market; around 50 % of their production is exported outside Europe ⁽⁸⁵⁾.

Nowadays, the massive increase in waterborne transport, driven by globalisation, increasing population, demand for energy and food, shifting trade patterns and the environmental need to move freight from roads to rail and water in Europe, presents serious challenges but also opportunities for the marine industries.

An initiative of all parties involved in the areas of shipping and shipbuilding, offshore industry and leisure craft, ports and infrastructure development, and equipment manufacturers and systems suppliers, the European Technology Platform (ETP) Waterborne was launched in 2005 at the Maritime Industries Forum (MIF) plenary. Its main objective is to bundle the research efforts of the European waterborne actors, in order to remain champions in maritime transport, in the production of efficient and safe vessels as well as the related systems and equipment, in providing infrastructure and logistics for ports and waterways, in offshore technology and leisure craft, and in creating high qualification employment opportunities in Europe.

Waterborne established a continuous dialogue on research issues amongst all the stakeholders in the waterborne transport value chain (including sea and inland transportation) and continuously contributes to the widest possible consensus.

Strategic research agenda

Based on the common medium and long-term vision for the year 2020, 'Vision 2020', the Waterborne strategic research agenda (WSRA) was developed to address the innovation challenges over the next 15 years, summarised under three pillars.

Safe, sustainable and efficient waterborne operations

- implementing goal-based/risk-based frameworks for cost-efficient safety;
- the 'zero accidents' target;
- the 'crashworthy' vessel;
- 'low emission' vessels and waterborne activities;
- enhanced waterborne security.

A competitive European maritime industry

- innovative vessels and floating structures;
- innovative marine equipment and systems;
- tools for accelerated innovation;
- next generation production processes;
- effective waterborne operations;
- technologies for new and extended marine operations.

⁽⁸⁵⁾ <http://www.waterborne-tp.org>

Manage and facilitate growth and changing trade patterns

- accelerated development of new port and infrastructure facilities;
- interoperability between modes;
- more efficient ports and infrastructure;
- intelligent transportation technologies and integrated ICT solutions.

Both the vision and the SRA are two-way communication tools (top-down and bottom-up) rather than position papers. They are key references for maritime research policymakers across Europe and need to be dynamic in order to accommodate for the actual progress in implementing the agenda, for modified scenarios and for other changes in policy focus. For this reason both documents are regularly reviewed, updated and widely distributed throughout the entire European waterborne industry, as part of the ETP Waterborne process.

The SRA has been primarily compiled to address the market and society challenges of the European waterborne sector, describing the key priority themes for research, development and innovation (RDI). As such, it supports in many aspects the major policy lines and initiatives of the EU Commission, such as e.g. safety, security and sustainability in transport, avoiding traffic congestions by modal shifts, etc.

The implementation of the SRA will follow the path described in the Waterborne implementation route map, which outlines the targets and specifies their time horizon and expected funding. The route map was developed and agreed between all the Waterborne stakeholders, through a number of technical workshops organised in 2007. Like its two precedent strategy documents, it will be periodically reviewed and updated. Moreover, it provides an overview of the possibilities of clustering in the form of large project initiatives. The Waterborne implementation route map 2007 was published in early 2008.

Update on platform activities

Waterborne is engaged in dialogue with the ERA-NETs MARTEC (Maritime Technologies)⁽⁸⁶⁾ and TRANSPORT⁽⁸⁷⁾. Particular attention has been given to reinforcing the existing national maritime forums (in Denmark, Finland, France, Germany, Italy, the Netherlands, Norway, Poland, Slovenia and Spain) and establishing or developing new national forum platforms (the so-called emulation process, under which Cyprus, Greece, Ireland, Romania, Turkey and the United Kingdom are considering the creation of a national platform).

Moreover, cooperation with other European technology platforms has continued, mainly with the European Rail Research Advisory Council (ERRAC), the European Road Transport Research Advisory Council (ERTRAC) and *Manufuture*.

In line with the development of other possible cross cutting cooperation, Waterborne was part of the multidisciplinary and cross-sectoral team that wrote the Aberdeen Declaration (EurOCEAN 2007). In the process, discussions have been started to

⁽⁸⁶⁾ <http://www.martec-era.net>
⁽⁸⁷⁾ <http://www.transport-era.net>

develop better understanding and possibly synergies and cooperation with the marine research and science community.

Waterborne aims at mobilising funds at all levels: according to their own estimates, implementation of their SRA requires 1.7 billion per year, of which only 4 % would come from the EU. The rest should come from national funding sources (15 %) and private sources (81 %). European funds are mostly used to support pre-competitive, fundamental and scientific research, while applied research is largely financed by private equity.

In conjunction with its Second General Assembly, Waterborne organised, in October 2007, the first European Maritime Research Policy Conference. This was followed in December by the COREDES-INTERSHIP-Waterborne conference, during which a number of large project initiatives (LPI) were presented and discussed.

Next steps

Waterborne will continue to disseminate and promote its research strategy with national programmes and industry and to contribute to the appropriate mobilisation and allocation of the necessary financial resources (private, national, regional, EU sources). Waterborne intends to expand its horizons within and beyond maritime transport, linking and building relationships with other relevant initiatives.

To implement its strategy, Waterborne's implementation process will include the following milestones:

- continuous promotion of the ETP (through the usual and new channels);
- contribute, through its route map, to the work programme of the upcoming FP7 calls (Nos 3, 4, 5 and 6);
- contribute, through its route map, to the work programme of the upcoming national and joint national calls (including MARTEC);
- monitor the results of FP7 calls (Nos 1 and 2) and of national programmes to update the route map;
- sign a memorandum of understanding with Member States and other funding partners to implement the route map;
- work towards the establishment of a Maritime Faculty within the European Institute of Technology (EIT) in order to create a Maritime KIC (Knowledge and Innovation Community);
- reinforcing dialogue with national maritime stakeholders;
- further develop dialogue with European other marine/maritime stakeholders, in the framework the *Blue book on European maritime policy*;
- dialogue with other relevant ETPs.

Launch

June 2004

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Vision document — 2005

‘Water safe, strong and sustainable — European vision for water supply and sanitation in 2030’

http://www.wsstp.eu/publishor/system/component_view.asp?LogDocId=61&PhyDocId=62

Strategic research agenda — 2006

‘Water research — A necessary investment in our common future’

http://www.wsstp.eu/publishor/system/component_view.asp?LogDocId=17&PhyDocId=9

Implementation action plan — 2007

<http://www.wsstp.eu/site/online/about/implementation>

Water Supply and Sanitation European Technology Platform (WSSTP)

Water is the basis of life. Advanced water supply and sanitation services and integrated water resources management are extremely important both for economic development and for safeguarding health and survival. Today, utilities and private companies in the EU provide largely adequate water and sanitation services to people, industry, agriculture and nature. However, there are a number of important challenges that threaten the security of supply including population growth and movement and a shortage of readily treatable water resources exacerbated by climate change, pollution, competition between water users and an infrastructure which is deteriorating faster than it is rehabilitated. Moreover, the European water sector is highly fragmented which is an obstacle for developing a comprehensive research strategy for a competitive water sector.

The European water sector is a major economic player (1 % of GDP) with a turnover in the EU of about EUR 80 billion and an average growth rate of 5 % per year, compared with 2.5 % per year average growth rate for the EU economy. The three

largest companies providing water supply and sanitation services in the world are European. In addition, a large number of European SMEs export their expertise and equipment across the world ⁽⁸⁸⁾.

The Water Supply and Sanitation Technology Platform (WSST), which brings together all stakeholders with an interest in water such as industrialists, research groups, policymakers, financiers and water consumers, intends to become a facilitator for focusing the highly fragmented European R & D resources on the global water sector priorities. The WSSTP aims to create synergies between diverse water using sectors, and accelerate the implementation of new methods and technologies. The core of the WSSTP vision is that by 2030 the European water sector will be the leading international centre of expertise for providing safe, clean and affordable water services while protecting the nature.

Strategic research agenda

The strategic research agenda (SRA) describes the research and technological developments required to enable the European water sector to answer four major challenges: increasing water stress and water costs, urbanisation, increased frequency and severity of extreme events, and lack of significant infrastructure such as water and waste water services in rural and underdeveloped areas.

Five areas of research have been identified to meet the major challenges the water sector faces.

- (1) **Balancing demand and supply:** all users of water will make sustainable use of water resources, by not using more water that is necessary or using water of a higher quality than needed.
- (2) **Ensuring appropriate quality and security:** ensure the quality and security of water supply and sewerage services.
- (3) **Reducing negative environmental impacts:** European water systems to be seen as a self-sustaining cycle of a valuable renewable natural resource, and a source of beneficial products.
- (4) **Novel approaches to design, construction and operation of water infrastructure assets:** to ensure that the performance and whole-life costs of water service infrastructure is optimised and takes full account of their social impact during construction, repair, rehabilitation and operation.
- (5) **Establishment of an enabling framework;** to enable the safe provision of water services to people, industry and agriculture in diverse environments by the implementation of sound socioeconomic, sociocultural and legal frameworks, respecting linguistic and cultural diversity and cultural heritage.

These five research areas all rely on a fundamental common strategy based on integrated water resources management (IWRM) which will facilitate the management of water resources to meet societal needs within environmental constraints.

⁽⁸⁸⁾ <http://www.wsstp.eu/site/online/home>

Update on platform activities

The platform became a non-profit association under Belgian law in September 2007; the main reason behind this evolution was the need to improve the ETP's governance structure, but the financial aspect also played an important role. The association has 45 members (industrial companies, research organisations, water utilities and trade organisations), and the number of people involved in the platform activities reached the threshold of 300 in 2007.

With the double objective of consolidating the new structure of the association and supporting projects, the Board of Directors meets on a monthly basis. National branches have been created in Denmark, Germany, Italy, the Netherlands and Finland, and are in preparation in many other countries, in parallel to the work of the Member States' Mirror Group. The platform is considering formalising the role of the Mirror Group through the internal rules of the Association.

A communication plan including a new website and the publication of leaflets was approved. The Second Stakeholders Conference was held in June 2008 in Brussels.

In 2007, the Water Supply and Sanitation Technology Platform published an implementation plan, describing the strategy chosen for the execution of the strategic research agenda through six pilot programmes, each addressing a major water challenge in Europe:

- pilot programme 1: Mitigation of water stress in coastal zones;
- pilot programme 2: Sustainable water management inside and around large urban areas;
- pilot programme 3: Sustainable water management for agriculture;
- pilot programme 4: Sustainable water management for industry;
- pilot programme 5: Reclamation of degraded water zones (surface water and groundwater);
- pilot programme 6: Proactive and corrective management of extreme hydro-climatic events.

Within each pilot programme, commercial consortia consisting of various types of stakeholders will implement initiatives in real life situations. This activity will be facilitated by the (Pilot) Programme Coordination Committee (PCC) in close cooperation with the Member States' Mirror Group.

Each pilot programme has been working with stakeholders to produce implementation plans based on real experience around Europe. Further 'cross-cutting' pilots are being developed on the topics of energy and climate change.

As regards implementing the SRA, a progressive transition from entirely public funds (i.e. grants and subsidies supporting fundamental and basic research), through public-private collaborative research to entirely privately funded testing and demonstration is foreseen.

Financial details will be outlined in the strategic deployment document, currently in preparation, but a first estimate of the total desired contribution from the seventh framework programme to implement the SRA is around EUR 318 million.

Next steps

The Water Supply and Sanitation Technology Platform will work on:

- completing the transition of the platform and its bodies to the new governance structure (a non-profit association);
- developing a comprehensive strategic deployment document (SDD) which will seek definite commitment and dedicated support from relevant partners but also look into possibilities of enhancing joint public–private financing mechanisms for research, technology development, testing and demonstration. Market surveys, tailoring of proposed and tested solutions to different situations and market penetration policies will also be dealt with;
- reviewing the strategic research agenda after two years from its publication, as a living document that needs to be constantly adapted and adjourned, incorporating new thinking that is being developed through the six pilot projects;
- establishing a broader collaboration with other technology platforms (i.e. SusChem, Construction, etc.) on fields of common interest, and enlarging the platform membership (especially from new Member States).

Launch

2005

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Vision document — 2006

‘A vision for zero emission fossil fuel plants’

<http://www.zero-emissionplatform.eu/website/library>

Strategic research agenda — 2006

<http://www.zero-emissionplatform.eu/website/library>

Strategic deployment document — 2006

<http://www.zero-emissionplatform.eu/website/library>

Zero Emission Fossil Fuel Power Plants (ZEP)

Experts agree that unless we cut greenhouse gas emissions — especially carbon dioxide (CO₂) — by 50–80 % (compared with today) by 2050, the impact on global warming will be disastrous. But with world energy demand expected to double by this date, the challenge will be enormous. It means we must act fast, using a portfolio of solutions, since no single solution will be capable of reducing CO₂ emissions on the massive scale required. This includes renewable energies, energy efficiency, and CO₂ capture and storage (CCS). Indeed if deployed in all industry sectors, CCS has a potential to reduce CO₂ emissions by over 50 % by 2050.

Despite most of the technology elements being available, CCS is still not deployed for two key reasons: the costs and risks still outweigh the commercial benefits; and the regulatory framework for CO₂ storage is not sufficiently defined.

The European Technology Platform for Zero Emission Fossil Fuel Power Plants (ZEP) aims at addressing these deployment barriers with the objective of enabling European fossil fuel power plants to have zero CO₂ emissions by 2020.

Strategic research agenda

The ZEP strategic research agenda, which hasn't been updated since its first official publication, describes a collaborative programme of technology development for reducing the costs and risks of deployment of CSS and recommends to:

- (1) urgently implement 10–12 integrated, large-scale CCS demonstration projects Europe-wide:
 - improve the cost-effectiveness and availability of current CO₂ capture technologies; optimise energy conversion efficiency when integrated into a power plant; and bring to commercial readiness by 2020;
 - assess the full potential for CO₂ geological storage, demonstrate its safety to the public and understand/respond to their concerns;
 - resolve all technological uncertainties and establish a critical mass of data for exploitation in parallel R & D projects;
- (2) develop new concepts already identified, but not validated, for demonstration by 2010–15 and implementation beyond 2020, for example:
 - advanced new materials and combustion systems;
 - storage in onshore, deep saline aquifers and CO₂ for enhanced oil recovery in the North Sea;
- (3) support long-term exploratory R & D into advanced, innovative concepts for implementation of next-generation technology, for example:
 - innovative CO₂ capture technologies (membranes, adsorption, etc.);
 - innovative concepts for CO₂ storage;
 - simple, reliable tools for long-term modelling and monitoring of CO₂ storage;
- (4) maximise cooperation at national, European and international level:
 - mobilise national and European funding and explore new options for launching large integrated projects, such as joint technology initiatives;
 - further promote international cooperation, especially with emerging countries such as China and India.

Subsequently, the strategic deployment document (SDD) outlines how to accelerate the market for zero emission power production with the following main objectives:

- kick-starting the CO₂ value chain with urgent short and long-term commercial incentives;
- establishing a regulatory framework for the geological storage of CO₂;
- gaining public support via a comprehensive public information campaign;
- establishing robust R & D funding under the FP7 (see SRA).

Update on platform activities

The Zero Emissions Fossil Fuel Plants Technology Platform currently counts 36 members. In 2007 the funding of the operational costs of the platform was equally divided among private industries and the EC. In 2008, with the funds of private sector stakeholders, the platform decided to hire a communications manager to coordinate a communication task force, and a consultant to further investigate the demonstration programme that ZEP advocates.

A number of horizontal groups (communication, technology, demonstration-implementation, policy and regulation task force) were established.

Cooperation with national and regional governments continued especially through the participation of Member State representatives in the Government Group (previously called Mirror Group), currently counting 21 members. National technology platforms working on the subject of reduction of CO₂ emissions were established, and there are links with ZEP European Technology Platform through the Government Group.

Regarding cooperation with other platforms, initial contacts were established with the European Steel Technology Platform (ESTEP) in view of developing joint demonstration activities on Carbon capture and storage.

The platform carried out several communication initiatives.

- The website has been transformed into a key tool for coordinating the platform's activities and it has become the central access point for all relevant information and documentation. Moreover, a complementary website with information for the general public is currently under development.
- The Advisory Council (AC) met seven times over the period 2007/first half of 2008 and executive committees gathered in between for important decisions. The last meeting of the AC was held in September 2008 ⁽⁸⁹⁾.
- The third General Assembly was held in November 2008 and dealt with the demonstration programme that ZEP considers necessary to kick-start the market for CCS.

The implementation of the strategic research agenda is progressing, in particular through FP7 research projects. Members of ZEP are active in research consortia awarded grants from the first and second energy calls.

Next steps

The platform will focus its efforts on:

- developing further its long-term vision on the implementation of CO₂ capture and storage (CCS);
- creating the right conditions for CCS and R & D;
- undertaking implementation actions.

⁽⁸⁹⁾ <http://www.zero-emissionplatform.eu/website/organisation/ac.html#acarchive>