



**Euro-CASE**

**THE EUROPEAN COUNCIL  
OF ACADEMIES OF APPLIED SCIENCES,  
TECHNOLOGIES AND ENGINEERING**

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**ANNUAL REPORT 2013**





## **Euro-CASE**

### **A HUB OF COLLECTIVE INTELLIGENCE**

The European Council of Academies of Applied Sciences, Technologies and Engineering is an independent non-profit organization of national academies of applied sciences, technologies and engineering representing 21 European countries.

Euro-CASE acts as a permanent forum for exchange and consultation between European institutions, industry and research.

Through its affiliated Academies, Euro-CASE has access to top expertise (about 6000 of Europe's most eminent engineers and technologists) and provides impartial, independent and balanced advice on technological issues with a clear European dimension to European institutions, national governments, companies and organizations.



### **Vision 2020**

***"Euro-CASE will be the voice of European excellence in Engineering, Applied Sciences and Technology for the world."***

The full text of Vision 2020 can be found on the Euro-CASE website

[www.euro-case.org](http://www.euro-case.org)



Reinhard Hüttli, Chairman of Euro-CASE

## MESSAGE FROM THE CHAIRMAN

Last year we commemorated the 20th anniversary of Euro-CASE and called for a new phase in independent science - and technology - based policy advice to European institutions. Our record of new policy activities this year underlines our strong commitment to partnership with the EU. I would like to take this opportunity to thank our past Chairman, Ms Lena Treschow Torell, and, as her successor, I look forward to reinforcing the previous actions and policies of Euro-CASE undertaken under her initiative.

The Euro-CASE Innovation Platform has generated numerous policy papers on important topics such as innovation financing, public procurement and advanced manufacturing. Its members have undertaken comprehensive analysis and recommendations that will be compiled in a summarising policy paper within the first half of 2014.

The Euro-CASE Energy Platform began its work in October 2013. The Platform has decided to start a policy project on the future of EU Emissions Trading Scheme, an issue which is highly important for the new European Commission that will be appointed in November 2014. In addition, the Energy Platform intends to work sequentially on technological requirements for the energy policy of the EU and member states level, facing the European 2030 climate and energy targets. The EU Commissioner for Energy, Günther Oettinger, who was the keynote speaker at our Annual Conference in Paris in 2012, has expressed great interest in the work of the Energy Platform. We are also pleased that the former Director General of the Joint Research Center (JRC), Dominique Ristori, who had inaugurated the first Energy Platform meeting, is now the new Director General of DG Energy.

I also want to express my best wishes for success to the new Euro-CASE Platform on Engineering Education, launched at the end of 2013 under the leadership of the Engineering Academy of the Czech Republic. This initiative is much welcomed, as Euro-CASE should be able to offer important impetus for the training of young engineers, scholars and scientists in Europe.

I am also pleased with the progress that has been accomplished since we signed the cooperation agreement with the JRC in November 2012. Together, we organized a large conference in Brussels on Energy and Climate Change; in addition Euro-CASE was present at other JRC meetings with Euro-CASE speakers. Most significantly, we organised a remarkable conference with the JRC and Anne Glover, the Chief Scientific Advisor to the President of the European Commission: at this event, the Presidents and delegates of 18 Euro-CASE Academies discussed opportunities for future cooperation with senior representatives of the European Commission. 15 interested Directorates-General were represented at senior level. Daniel Calleja, Director General of DG Enterprise and Industry highlighted a series of potential topics for collaboration between Euro-CASE and the Commission, and made clear that the door is now open for broader cooperation. We are looking forward to continue our fruitful collaboration with the JRC and its new Director General, Vladimir Sucha.

The conference was a great opportunity to start a cooperative dialogue between the European Commission and Euro-CASE. In this regard I am also satisfied that we are now seeking cooperation with other European associative bodies like ALLEA and EASAC. At the Board meeting in Munich, in May 2013, we agreed on the "Euro-CASE Guidelines on Advising Policy Makers and Society". This was an important step towards transparent working rules within Euro-CASE.

Finally, it is important for me to mention that Euro-CASE successfully held an EU-US Frontiers of Engineering Symposium in 2013 and that the next one is already scheduled to take place in Seattle, USA, in the fall of 2014. It is important that we offer young engineers and scientists this unique opportunity to participate in such an enriching transatlantic exchange.

Euro-CASE expanded its activities last year. In line with our strategy, now more than ever we want to provide independent science-and technology-based policy advice with the help of our 6000 experts from science and industry, in order to support policy makers in reaching more evidence based political decisions.

Last but not least, I sincerely thank our colleagues from the Portuguese Academy of Engineering for hosting the successful 2013 Annual Conference in Lisbon: "Boosting Innovation in Europe: USA-EU - Why the innovation gap?". I would also like to extend my gratitude to the supportive staff in Paris and Brussels and to all our Fellows who are contributing to our activities. Euro-CASE would not be as successful as it is without their relentless efforts.

In this spirit, I wish us all every success for the future activities.

Reinhard Hüttli

# Euro-CASE ANNUAL CONFERENCES

Beginning in 2008, Euro-CASE member academies have organised a series of annual conferences:

**2008 London:** “How Can Europe Meet its 2020 Renewables Targets?” (RAEng)

**2009 Stockholm:** “Increasing the interest in Mathematics, Science and Technology” (IVA)

**2010 Berlin:** “Innovation - Best Practices” (acatech)

**2011 Madrid:** “Water and Food Security in Europe” (RAI)

**2012 Paris:** “Energy Independence for Europe” (NATF)

**2013 Lisbon:** “Boosting Innovation in Europe” (PAE).

## 2013 ANNUAL CONFERENCE, DECEMBER 10, LISBON



### Context

Innovation has long been one of the key areas of focus for Euro-CASE. The Innovation Platform that was established in 2011 has conducted five meetings to date and has been continuously working on drafting policy papers on various relevant topics related to innovation. During the lifetime of the Platform it became obvious that despite the high level of excellent research conducted all across Europe, it seemed difficult to capitalize on the results in form of marketable products. This situation of excellent research results and little economic exploitation has become known as the European Paradox. Other regions in the world, most notably the US but also dynamic countries in Asia, are much more prone to entrepreneurial activities and economic exploitation of research results. On average, Europe is doing well when it comes to producing goods with medium-high technological content but falls short in the manufacturing of high-tech products. These perspectives led to the decision to hold this year's Euro-CASE Annual Conference on the topic “Boosting Innovation in Europe: EU-USA - Why the innovation gap?”

### Opening Ceremony and Annual Conference Program

The Annual Conference was convened by the Portuguese Academy of Engineering (Academia de Engenharia) and took place in the magnificent surroundings of the historic Palácio Foz in Lisbon, in the presence of about 90 invited guests. The event was opened by keynote speeches by Fernando Santana, President of the Portuguese Academy of Engineering, followed by Reinhard Hüttel, Chairman of Euro-CASE and the honourable Minister of Education and Science of Portugal, Nuno Crato.

The first session, chaired by Manuel Carrondo, member of the Portuguese Academy of Engineering, was devoted to the topic “Filling the gap through innovation”. The participants largely agreed with the opening statements that the main difference in levels of innovation between the EU and the US can be attributed to cultural factors, mainly regarding the culture of risk taking. There are especially noteworthy differences surrounding the creation and disappearance of SMEs and the ways that society deals with success and failure.

In his speech “Promoting Corporate Innovation in Portugal”, João Bento, President of COTEC (Association of Enterprises for Innovation) Portugal, emphasised that many of the advances in terms of innovation in Portugal have been swept away by the devastating financial crises in recent years.

Jan Marco Müller, Assistant to Anne Glover, Chief Scientific Adviser to European Commission's President José Manuel Barroso, also concurred that culture matters, and highlighted the differences in risk perception between the EU and US, taking as an example genetically modified crops. Actors across the EU do produce excellent scientific results, but should be considering the risks also in relation to potential rewards.

Ulla Engelmann, Head of Unit for Stakeholder Relations of the Joint Research Centre (JRC), introduced the activities of the JRC and its similarities to Euro-CASE when it comes to science-based policy advice. She too highlighted the qualities of European research. She also underlined the fact that there are countless areas of research cooperation between the US and the EU. At EU level, the most important current areas for cooperation include E-Mobility and Smart Grids.



B. O. Nilsson



M. P. Diogo (New University of Lisbon)



Sir W. Wakerham



Euro-CASE Annual Conference 2013, Palácio Foz, Lisbon

In the lively discussion which followed, participants highlighted the main differences in the areas of creativity and research, intellectual property, culture between the EU and US, and the diversity of Europe compared to the relative homogeneity of the US. Cultural factors were also emphasised by Euro-CASE Chairman Reinhard Hüttli who claimed that social acceptance of modern technologies is also driven by communication. Scientists in Europe should be more open towards the public, as the success of their own respective research was also dependent on how it is marketed to the public. He also claimed that scientists would need some time to adapt to their new role but that there were high rewards to be expected, as, for example, the dialogue forum in the German academies' project "Energy System of the Future" clearly shows. When it came to science-and technology-based policy advice, scientists should be thinking more in terms of policy options rather than simplistic recommendations.

The innovation gap can be filled by extensive training of people in business creation, strengthening the entrepreneurial culture in companies, continuing to build trust between the worlds of politics and business, and making better use of the diversity in the EU. It was emphasised that Europe must be careful not to exaggerate the role of the state when it comes to economic research activities.

The afternoon session, chaired by Sir William Wakeham, Senior Vice President and Honorary Secretary for International Activities, Royal Academy of Engineering, started with an outline of the discussion paper "Boosting Innovation in Europe: USA-EU - Why the innovation gap?, Horizon 2020 - How to boost Innovation?", by Maria Paula Diogo, New University of Lisbon. Following that introduction, Björn Nilsson, Chair of the Euro-CASE Innovation Platform and President of the Royal Swedish Academy of Engineering Sciences (IVA), presented the Euro-CASE Innovation Platform and the Global Entrepreneurship Monitor. The latter indicates that the US-EU gap is closing but that there continue to be large differences in terms of entrepreneurship attitudes and especially the fear of failure which is considerably higher in the EU than in the US.

Ian Ritchie, Honorary Treasurer, Royal Academy of Engineering, provided a detailed overview of the differences in the provision of venture capital. The financial crisis almost led to a collapse of the venture capital system in the EU which, in turn, led to an increase in public funding schemes that were neither able to contribute to growth nor to help ailing SMEs. The question remained why European



R. Hüttli (Chairman of Euro-CASE), N. Crato (Portuguese Minister of Education & Science), F. Santana (President PAE)

SMEs can't grow big (such as e.g. Amazon, Facebook, etc.). During the discussion, participants largely agreed that in the EU there should be put more emphasis on tax incentives and co-funding and less focus on firm survival.

In his speech on funding mechanisms, Manuel Heitor, former Secretary of State for Science in Portugal, seized the opportunity to call for more public expenditure on R&D. With the exception of Germany and the Nordic countries, government expenditure on R&D is shrinking in Europe due to the financial crisis, with negative consequences for European innovation systems. During the discussion which followed, it was mentioned that business expenditure on R&D was equally if not more important for innovation and that different framework conditions among EU member states needed to be taken into account.

During the Panel discussion, Dominique Peccoud, an NATF Fellow, provided valuable input to the paper by Maria Paula Diogo. Jean-Louis Migeot, President of the Royal Academy of Belgium (ARB), claimed that an entrepreneurial spirit is missing in Europe. Public incentives and support programs did not help to overcome the gap with the US in terms of risk taking. Also social acknowledgement of entrepreneurial undertakings was lacking. SMEs should be given a much more prominent role in EU funded research projects. Much more effort was necessary in terms of education and cultural change to strengthen the entrepreneurial spirit across Europe.

<http://www.academia-engenharia.org/euro-case-conference/>

## 2014 ANNUAL CONFERENCE, DECEMBER 2-3, BRUSSELS



Académie royale  
des Sciences, des Lettres et des Beaux-Arts  
de Belgique



The Euro-CASE Annual Conference 2014 will take place in the Palais des Académies in Brussels on December 3. It will be preceded by an opening event on the evening of December 2. The Annual Conference will be organised jointly by acatech, ARB and IVA. Principal subjects will be related to innovation and energy policy in Europe. Euro-CASE will invite members of the newly elected European Commission and other actors from European institutions.

# FRONTIERS OF ENGINEERING 2013/2014 CYCLE

The EU-US "Frontiers of Engineering" symposium is an interdisciplinary workshop bringing together 60 scientists and engineers under 40 years old (in some exceptional cases 45), from both sides of the Atlantic, for three days of presentations and intensive discussions on key issues at the intersection of traditional disciplines. The objective of the meeting is the establishment of contacts between the next generation of leaders in engineering, and the creation of a youth network to facilitate transatlantic engineering collaboration and the transfer of new techniques and methods across four topics of major societal interest.



FOE symposium

Organisational structure and procedures were developed over the last twenty years by the National Academy of Engineering of the United States. Euro-CASE was approached for this collaboration for the first time in 2009. The Royal Academy of Engineering, on behalf of Euro-CASE, was the first co-organizer of the 2010/2011 cycle. The 2010 Symposium was held in Cambridge (UK), and the 2011 event in Irvine (California). After a year's break, the 2013/2014 cycle is being co-ordinated by the National Academy of Technologies of France, on behalf of the Euro-CASE academies. The first meeting of this cycle took place in November in Chantilly, near Paris. The second will take place in Seattle (Washington) on November 9-12, 2014.

The 2013 themes were:

- ▶ The Future of Transportation, Intelligent Transport System
- ▶ Nano-sensors
- ▶ Wireless Broadband
- ▶ Big Data

An invited keynote speaker, French explorer Jean-Louis Etienne, a Fellow of NATF, conquered the audience with his adventurous stories of his Arctic and Antarctic solitary discoveries in which technology played a major role.



C. D. Mote (President NAE), J.L. Etienne (NATF), G. Roucairol (President NATF)



Poster Session FOE Symposium

The program of the meeting in 2013 was jointly prepared by Yves Caseau, Executive Vice President, Technologies, Services & Innovation, Bouygues Telecommunications, member of the NATF, and by Professor Sergio Verdu, Princeton University, and member of the NAE.

It is worth noting that a poster session of two half-days is organised during each meeting. All participants are then invited to present their own research work, and lively discussions arise between all present. Attendees, in the post-meeting survey, showed a high regard for Frontiers of Engineering Symposia, and 100% of them would be willing to participate again in the future.

Boeing Corporation will host the 2014 edition of this second cycle. Yves Caseau on behalf of Euro-CASE and the NATF will continue co-piloting the programme while the NAE has designated a new co-chair, Professor Christos Floudas, also from Princeton University. The four themes that have been selected are:

- ▶ Energy Storage across Scale
- ▶ Protein Design for Therapeutic Applications
- ▶ Smart Homes
- ▶ Atoms to Airplanes: Designer/Aerospace Engineered Materials

The Board of Euro -CASE is in the process of proposing names of European co-chairs for each of the above subjects. The Board also has the task of selecting and proposing future participants in this Symposium.

### Parallel bilateral meeting NAE-NATF

During the Symposium in Chantilly, a bilateral meeting was held between the NAE (C. Dan Mote, President, Lance Davis, Executive Director, Venky Naranayamurti, Foreign Secretary and Janet Hunziker, Senior Program Manager) and the NATF (Gerard Roucairol, President, Bruno Revellin - Falcoz, Honorary President and Delegate for International Relations and Jacques Lukasik, Secretary General of Euro-CASE and a member of the NATF).



NATF - NAE meeting (B. Revellin-Falcoz, L. Davis, V. Narayanamurti, G. Roucairol, J. Lukasik, J. Hunziker, D. Mote)

# Euro-CASE PLATFORMS

Euro-CASE Platforms are organised as working groups where various academies' representatives consider a specific topic and produce reports, which are often transmitted to the appropriate authorities in various European institutions, and may become a basis for further interactions with them.

## INNOVATION

The EU has intensified its approach to innovation policy, as is best seen in the Europe 2020 strategy and its flagship initiative "Innovation Union". In particular, the new research framework program Horizon 2020, starting in 2014, stands for the promotion of the whole chain of the innovation process from fundamental research to product development. Euro-CASE intends to accompany the EU on its journey and, as it is an organisation built upon the high-level expertise of its members, offers independent, science-and technology-based policy advice to the European institutions.

At the Euro-CASE Board meeting in November 2011, a new Euro-CASE initiative was agreed upon: launching the Innovation Platform with Dietmar Harhoff, acatech, as Chair and Björn O. Nilsson, IVA, as Co-Chair. The Platform was scheduled to run for two years: January 2012 - December 2013, with the objective of preparing position and policy strategy papers on a wide range of topics related to innovation policy, to which would be added an analysis of best practices of national innovation strategies within Europe ("learning from each other"). The long-term purpose of the Platform is to contribute to transforming Europe into one of the most successful innovation regions in the world, and, in a proactive way, to provide science-and technology-based policy advice to the EU and European institutions on innovation issues.

For personal reasons, Dietmar Harhoff had to resign his Chairmanship of the Innovation Platform at the end of 2012. The Platform was run in 2013 under the leadership of Björn O. Nilsson with the help of Rudolf Hielscher (acatech, Brussels office).



Innovation Platform, Madrid meeting, June 6, 2013

Since its launch, eleven Euro-CASE member academies have participated in this Platform. The following meetings have been organised:

- ▶ February 15-16, 2012, Stockholm (IVA), on "Innovation Procurement"
- ▶ March 29-30, 2012, Brussels (acatech), on "Public-Private-Partnerships: successful partnering models for science-industry-research cooperation"
- ▶ October 11-12, 2012, London (RAEng), on "Financing Innovation"
- ▶ January 23-24, 2013, Helsinki (TAF), "Innovation and Changing Industry Structure"
- ▶ June 5-6, 2013, Madrid (RAI), "Transforming Manufacturing: A Path towards a Smart, Sustainable and Inclusive Growth"
- ▶ October 29-30, 2013, Lisbon (PAE), "Boosting Innovation in Europe, through the understanding of the gap when comparing with the US"

The following Position Papers produced by the Platform can now be downloaded from:

[www.euro-case.org/index.php/activites/item/321-innovation.html](http://www.euro-case.org/index.php/activites/item/321-innovation.html):

- ▶ Financing Innovation
- ▶ Innovation Procurement
- ▶ Transforming Manufacturing
- ▶ EU Public-Private Partnerships in Research & Innovation

A closing meeting of the Platform will be held in Paris (NATF), on March 17, 2014.

## ENERGY

Many member academies have been working on energy issues and the topic was the main theme of the 2012 Annual Euro-CASE Conference "Energy Independence for Europe", hosted by the NATF in Paris. In order to bring together the combined expertise of the academies' renowned experts, representatives of fourteen national academies came to Brussels on October 1-2, 2013 for the launch event of the Euro-CASE Energy Platform. The newly founded Euro-CASE Platform will support the European Commission with its expertise and will develop viable options for the future of European energy policy, in dialogue with government, academia, business and the public.



The Euro-CASE Energy Platform is co-chaired by:

- ▶ Ottmar Edenhofer for acatech, Director of the Mercator Research Institute on Global Commons and Climate Change (MCC), Deputy Director and Chief Economist at the Potsdam Institute for Climate Research and Co-Chair of Working Group III of the IPCC,
- ▶ Bernard Tardieu for NATF, Chairman of its Energy and Climate Change Committee,
- ▶ Bo Normark for IVA, Power Circle AB, President, Former Senior Vice President, ABB Grid Systems.



Energy Platform, Brussels meeting, Oct. 1-2, 2013

During the kick-off event that was honoured by the presence of the Director General of the Joint Research Centre, Dominique Ristori (now Director General of DG Energy), the Platform agreed that the EU was the key to a viable implementation of a transition to sustainable energy supply in its Member States. A revived EU-ETS and market based and harmonised support schemes throughout Europe were important aspects of a EU-wide energy turnaround.

Given the complexity of the topic and the multiplicity of different possible approaches, the Platform decided to work in a sequential manner. In the first instance, Platform experts will develop scenarios for the future of the European Union Emissions Trading Scheme (EU ETS). These options should provide policy makers with a sound basis for their policies. In addition, the effects of these possible paths will be analysed with regard to the promotion of renewable energies and innovation policies in the EU and its Member States. Initial results should be published by the end of 2014. As a second step, and in light of the ongoing discussions about long-term issues in the field of energy at the European level, the Platform will focus on technological innovation related to requirements for the energy policy of the EU and Member States' level and will face the question: "How does the European Energy System look like in 2030?" Its working basis will be the communication "A 2030 framework for climate and energy policies" (based on the corresponding Green Paper and public consultation). For this matter IVA will provide a project officer, Jan Nordling, working particularly along with the co-chair of the Energy Platform, Bo Normark.

With the combined state-of-the-art expertise of the participating academies, the Energy Platform will continue to offer independent science-and technology-based policy advice. EU Commissioner for Energy, Günther Oettinger, has warmly welcomed the initiative. It is intended that the results of the Platform find their way into the deliberations of the Commission on the framework for a European climate and energy policy. It is evident for most stakeholders that the energy systems of the EU countries are inextricably linked. Therefore, the Energy Platform ideally complements energy policy advice also on the national level. The launch of the Energy Platform also reinforces the Cooperation Agreement between JRC and Euro-CASE signed in November 2012.

The next Energy Platform meetings will take place in February in Brussels and in May 2014 in Stockholm.

## ENGINEERING EDUCATION

On the occasion of its meeting in May 2013, the Euro-CASE Board has decided to support the proposal of Petr Zuna, Vice-President of the Engineering Academy of the Czech Republic (EA CR), to revive an Engineering Education Platform which already operated a few years ago. The Platform was launched in November, in Prague. 10 Euro-CASE academies have already declared their interest to participate in this Platform.

Some objectives are proposed as follows:

- ▶ Create a "Conversion table" of various, existing engineering titles in Europe
- ▶ "Best practices" - a comparison of engineering education methods
- ▶ Foster cooperation with industry in all relevant engineering fields
- ▶ Find ways to make engineering studies more attractive to female students
- ▶ Suggest ways to motivate the state, media and parents.

The next meeting will take place in Prague in May 2014.



P. Zuna, J. Lukasik

# RELATIONS WITH EUROPEAN INSTITUTIONS AND OTHER INTERNATIONAL ACTIVITIES

Various Euro-CASE interactions and contacts with:

## EUROPEAN COMMISSION



European Commission

- ▶ DG Research and Innovation (DG Robert-Jan Smits)
- ▶ DG Energy (Commissioner Günther Oettinger)
- ▶ DG Enterprise and Industry (DG Daniel Calleja)
- ▶ Joint Research Center (DG Dominique Ristori and Deputy DG Vladimir Sucha)
- ▶ Chief Scientific Advisor to the President of the European Commission (Anne Glover).

## EUROPEAN PARLIAMENT

- ▶ STOA, Science and Technology Options Assessment (Chairman and Vice-Chairman, respectively MEPs Antonio Correia de Campos and Paul Rübig)
- ▶ Certain members of the European Parliament who participate in various Research, Innovation, Industry Committees.

## OTHER INSTITUTIONS ON THE EUROPEAN LEVEL

- ▶ All European Academies (ALLEA), [www.allea.org](http://www.allea.org)
- ▶ European Academies Science Advisory Council (EASAC), [www.easac.eu](http://www.easac.eu)
- ▶ Science Europe Engineering Scientific Committee (ENGITECH), [www.scienceeurope.org](http://www.scienceeurope.org)
- ▶ European Institute of Innovation and Technology (EIT), [www.eit.europa.eu](http://www.eit.europa.eu)
- ▶ European Industrial Research Management Association (EIRMA), [www.eirma.org](http://www.eirma.org)
- ▶ European Research Council (ERC), [www.erc.europa.eu](http://www.erc.europa.eu)
- ▶ European Round Table of Industrialists (ERT), [www.ert.eu](http://www.ert.eu)

## JOINT RESEARCH CENTRE (JRC) OF THE EUROPEAN COMMISSION



The JRC is the European Commission's in-house science service. It provides independent scientific advice for policy decisions, with a view to ensuring that the European Union achieves its Europe 2020 goals for a productive economy as well as a safe, secure and sustainable future. The JRC includes 7 institutes in 5 European countries and collaborates extensively with over 1000 public and private organisations, institutions and expert groups.

In November 2012, in the course of the Opening Ceremony of the 2012 Annual Conference in Paris, Director General of JRC, Dominique Ristori, and Lena Treschow Torell, Chairman of Euro-CASE, signed a Memorandum of Understanding (MoU) to formalize and reinforce bilateral relations between the two organizations.

Five priority areas were identified in the MoU:

- ▶ Energy
- ▶ Transport and Mobility
- ▶ Innovation
- ▶ Education and Training
- ▶ Technology and Society

Over the course of 2013, many direct interactions between JRC and Euro-CASE took place. Below are a few examples:

- ▶ Jacques Lukasik participated in the Round Table in April on "How to increase the contribution of Universities to Science and Innovation", and presented a point of view of business needs and expectations.



Visit JRC 25 01 2013. Ispra, L. Treschow Torell, J. Lukasik

- ▶ A visit to the JRC Research Centre in Ispra (Italy) was organized for a delegation of Euro-CASE Board members in January.

- ▶ Bjorn Nilsson, a member of the Executive Committee, had an opportunity to present Euro-CASE activities and strategy to the main JRC stakeholders and its Board of Governors in June.

- ▶ Anne Glover, Chief Scientific Advisor to the President of the EC, Euro-CASE and JRC jointly hosted a high-level Workshop in Brussels with representatives of 15 DGs in September. 18 member Academies were represented by their Presidents or high ranking officers (see below).

- ▶ On September 19, the JRC and Euro-CASE organized a Round Table “The dialogue between science, technology and society around two cases: energy and climate change” with about 100 participants.



Meeting 19.09.2013 (D. Wilkinson, U. Engelmann, D. Ristori, E. Herczog, J. Lukasik, P. Nicolas)



Meeting 19.09.2013 (V. Sucha, M. da Graça Carvalho, D. Ristori, J. Lukasik, M. Betti)

- ▶ A project of organising a joint public conference in 2014 on “Digital and Internet Privacy” has been proposed. The conference should also deal with challenges in relations between citizens, the ICT industry and the state.

### September 9 meeting in Brussels with Anne Glover, DG representatives and JRC



Meeting 09.09.2013

The main theme of a high level Conference with Anne Glover and the European Commission authorities was “Independent science-and technology-based policy advice from Euro-CASE: How can technology increase Europe’s competitiveness and innovative power?”

The main objectives of this workshop were:

- ▶ To allow different participating parties to present their most challenging topics and operating principles, in order to generate a better mutual understanding

- ▶ To illustrate how the European Commission could benefit from Euro-CASE’s independent, transversal expertise, represented by more than 6000 Fellows, coming from academia and business, in the debate on key issues, relevant to the future of European citizens

- ▶ To discuss, with all participants, future fields of cooperation as well as possible financing mechanisms.

Although it is difficult to briefly resume such a meeting, given its importance, below are some highlights from various talks, presentations and discussions.

Anne Glover, in her opening talk, referred to the importance of science-based policy advice for the European Commission, especially in the area of innovation policy. In her view, Euro-CASE could provide specialized evidence on technological science related questions and could play an important role in making complex issues understandable for technology-distant actors. The strong, influential and far-reaching network of experts of Euro-CASE was invaluable to the European Commission. Furthermore, she alluded to the increasing importance of foresight within Europe, the restructuring of the European Foresight Processes, and considered that Euro-CASE could play an important role here.

Reinhard F. Hüttl confirmed the willingness of Euro-CASE to enter a long-term and structured dialogue with the Commission, with the aim of initiating specific projects on science-and technology-based policy advice. He particularly emphasized Euro-CASE’s commitment to independent, objective advice, as set out in its “Guidelines on advising policy makers and society”.



D. Ristori, A. Glover, R. Hüttl

Daniel Calleja, Director-General of DG Enterprise and Industry, stressed the importance of innovation and industry for Europe. 20% of the budget of Horizon 2020 was intended for industrial and emerging technologies. The strategy of his DG focused on greater internationalization of R&D, better access to finance (venture capital), the promotion of skills and education, and the strengthening of entrepreneurial spirit across Europe (“Action Plan for Entrepreneurship”).

Daniel Calleja identified the following fields as appropriate for deeper collaboration with Euro-CASE:

- ▶ Advanced Manufacturing Technologies
- ▶ Key Enabling Technologies (KETs)
- ▶ Bio-based Products/ Bio-economy
- ▶ Green Vehicles
- ▶ Energy
- ▶ Aerospace, Defence, Aviation

Humberto Delgado Rosa, Director for Mainstreaming Adaptation in DG Climate Action, mentioned potential topics of cooperation with Euro-CASE in the following fields:

- ▶ Energy (smart grids and super grids, also consideration of conventional energy sources such as carbon use)
- ▶ Transport (sustainable fuels - not only for vehicles but also for ships and aircrafts, efficient technologies)
- ▶ Forestry and agriculture (evidence regarding the production of harmful emissions in agriculture)
- ▶ Adaptation to climate change (greater use of technologies in the areas of landscape design, coastal design, eco-engineering, etc.)

He concluded that the Commission has a great need for science-based institutions that it can turn to when dealing with complex technological issues.

Tassos Haniotis, Director for Economic Analysis in DG Agriculture, explained the challenges for R&D in agriculture. The political focus on soil, land use and new technologies was a paradigm shift through which the topic of innovation in agriculture received renewed importance.

He saw potential for cooperation with Euro-CASE in the following areas:

- ▶ Relationships between energy and climate policy on the one hand, and agriculture and food security on the other hand
- ▶ The need for increased productivity while minimising soil erosion, water and air pollution, and loss of biodiversity
- ▶ Social challenges (structural changes, Green Economy).

In conclusion of the meeting, Dominique Ristori confirmed his intention to deepen cooperation between the JRC and Euro-CASE, especially in the energy sector. He confirmed that he would send one JRC representative to join the Energy Platform and was himself available as a speaker for the first Platform meeting.

Anne Glover, the JRC and representatives of various DG agreed to strengthen cooperation between the European Commission and Euro-CASE related to independent science and technology-based policy advice. In a structured dialogue between science, business and policy, issues of cooperation should be prioritized and specific consulting projects be initiated.



D. Calleja, R. Hüttl

## CAETS

International Council of Academies of Engineering and Technological Sciences (CAETS): [www.caets.org](http://www.caets.org)

- ▶ Jacques Lukasik, Secretary General, participated in the Annual meeting of CAETS in June, in Budapest. He had the opportunity to present Euro-CASE activities and strategy. It is worth noting that 15 out of 28 CAETS members participate also in Euro-CASE.
- ▶ The topic of the CAETS Symposium "Innovative Approaches to Engineering Education" allowed for a comparison of various educative systems and methods in Europe, Asia, Australia and Americas.



CAETS meeting, Budapest, June 2013

# MEMBER ACADEMIES' MAJOR EVENTS AND ACHIEVEMENTS IN 2013

More detailed information for each Academy can be found on their web sites.

## **Belgium** [www.academieroyale.be](http://www.academieroyale.be)

- ▶ Nobel Prize in Physics was awarded to Prof. François Englert, ARB associate member (class: "Sciences").
- ▶ ARB organized successful international Symposia such as "Democracy halted?" or "Human Being: an animal like the others?", on the occasion of the 100th death anniversary of Alfred Wallace.
- ▶ Initiated by the class "Technology & Society", a Lavoisier Chair was created. Its general theme is the role that science and technology should play in contributing to the fight against poverty. The first chair was attributed to Professor Philippe Kourilsky.

## **Croatia** [www.hatz.hr](http://www.hatz.hr)

- ▶ The Croatian Academy of Engineering Sciences sponsored several international conferences, symposia and workshops that were organized in Croatia during 2013.
- ▶ Academy members participated in numerous R&D projects funded by EU research programmes.
- ▶ As members of various international boards, Academy Fellows took part in leadership activities and meetings of many engineering associations and EU committees.

## **Czech Republic** [www.eacr.cz](http://www.eacr.cz)

- ▶ Czech Technology Mission to Sweden: EA CR participated in the Czech Technology Mission to Sweden organized by the Ministry of Foreign Affairs of the Czech Republic.
- ▶ EA CR initiated a process of revitalization of the Euro-CASE Platform Engineering Education.
- ▶ The EA CR Annual Prize was established in 1997 to promote outstanding results of Engineering in the Czech Republic. The 2013 Award was presented to the team of designers of the Czech company NOEN Unicov, led by Dr. Jan Marek, for the advanced, statically and dynamically optimized construction design of the new generation of large bucket wheel excavators.

## **Denmark** [www.atv.dk](http://www.atv.dk)

- ▶ Research and Innovation Policy Reform: ATV played a key role in the government's reform process which aims to strengthen and simplify the Danish public research and innovation system. The Academy gave input to decision-makers and facilitated workshops.
- ▶ Strengthening science and engineering in the primary school system: Project and conference on how to recruit more primary school teachers specialized in science.
- ▶ Conference on Research-based Public Sector Consultancy was organized.

## **Finland** [www.technologyacademy.fi](http://www.technologyacademy.fi)

- ▶ The call for nominations for the sixth Millennium Technology Prize 2014, which closed on July 31, gathered 45 candidates which is an increase of almost 20% with respect to the previous call.
- ▶ The International Millennium Youth Camp was organized in Finland on June 9-16. The camp hosted 60 talented young people, 16-19 years old, from 31 countries. The purpose of the event was to give the participants an overview of Finnish expertise and top-level research

in natural sciences, mathematics and technology and give them an opportunity to network with each other.

- ▶ TAF hosted one of the meetings of the Euro-CASE Innovation Platform on the topic "Innovation and Changing Industry Structure".

## **France** [www.academie-technologies.fr](http://www.academie-technologies.fr)

▶ The National Academy of Technologies of France was appointed, by law, as an Academy placed under a "High Patronage of the President of the French Republic".

- ▶ Within 34 National Industrial Innovation Programs, three Fellows of the NATF have been appointed by the Government as Project Leaders: Gerard Roucaïrol, President of NATF, on "Super calculators", Jean Botti, General Director Technology and Innovation of Airbus Group (former EADS), on "An electric plane and a new generation of aircrafts", and Bernard Charles, General Director of Dassault Systems, on "Plant of the future".
- ▶ NATF has signed an agreement with a filmmaking company "Effervescence" to co-produce for the French-German TV Channel "Arte", 21 bi-monthly broadcasts related to innovation and emergent technologies in "Mankind", "Earth" and "Objects". Within the framework of a bilateral agreement with acatech, the German academy will contribute to the process of selecting topics and the most appropriate experts.

## **Germany** [www.acatech.de](http://www.acatech.de)

- ▶ The "Energy systems of the future" project was initiated: 100 scientists are working on questions related to the "Energy Turnaround" in Germany. The annual assembly of "Energy Turnaround" took place in Potsdam. Special guests included Matthias Platzeck, Minister President of Brandenburg, and Klaus Töpfer, Potsdamer Institute for Advanced Sustainability Studies (IASS).
- ▶ The "Innovation Dialogue" with Chancellor Angela Merkel was focused on "Importance of innovative business models and services with focus on digitalisation".
- ▶ A Congress on "Internet Privacy" was organised.
- ▶ The Annual Conference in the Berlin Philharmonic Hall "Science opens up new perspectives" was attended by 600 guests, including Jacques Lukasik, Secretary General of Euro-CASE.

## **Greece**

[http://portal.tee.gr/portal/page/portal/INTER\\_RELATIONS/english/role](http://portal.tee.gr/portal/page/portal/INTER_RELATIONS/english/role)

- ▶ European Union Programmes: due to the economic crisis in Greece and the lack of funds, the Technical Chamber of Greece has focused, mainly, on the organization of events funded by the European Union.
- ▶ TCG is participating in the "Intelligent Energy Europe" for a "Sustainable Future" project as coordinator of the sub-project titled "Adding to SEAP" (Sustainable Energy Action Plan) ([www.seap-plus.eu](http://www.seap-plus.eu)).
- ▶ SEAP-PLUS Energy Days have been organized in each partner region, including a variety of events such as informative events for local and regional stakeholders, promoting the Covenant of Mayors (CoM) initiative. Some of the Energy Days were organised during the EU Sustainable Energy Week (EUSEW) in June.

### **Hungary** [www.mernokakademia.hu](http://www.mernokakademia.hu)

- ▶ HAE hosted, in June 2013, the Annual Meeting of CAETS in Budapest and organized an international symposium on "Educating Engineers". As a result of this event a statement was agreed on the above mentioned theme.
- ▶ A conference on "Improving Surface Transport" was organized in August 2013, with 130 participants.

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### **Ireland** [www.iae.ie](http://www.iae.ie)

- ▶ Publication of Policy Advisory on "The Future of Oil and Gas in Ireland" and a meeting with the Minister of State, Fergus O'Dowd, Department of Communications, Energy and Natural Resources to discuss it.
- ▶ Launch of Policy Advisory on "Achieving Ireland's Energy and CO<sub>2</sub> Reduction Targets - an Alternative Approach" and a meeting with the Minister for Communications, Energy and Natural Resources, Pat Rabbitte, T.D., to discuss it.
- ▶ Launching of the IAE/Intel Labs Europe report on the "Lecture Series on Engineering Research and Innovation (2011 - 2012)" by the Minister for Education and Skills, Ruairi Quinn, T.D.
- ▶ Prof. Gerry Byrne (as a member of acatech) attended the joint acatech and US National Academy (NAE) meeting in Berlin, which was a precursor to negotiations on the Transatlantic Free Trade Agreement at the G8 meeting in Lough Erne.

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### **Italy** [www.fast.mi.it](http://www.fast.mi.it)

- ▶ Environment: Many related events have taken place, the principal being "Biological Sewage Treatment Plants", which is a basic course on the management of processes. Other ones were "Reclamation of polluted sites in Lombardy", "Risk analysis in reclamation" and "Purification of industrial wastes".
- ▶ FAST has carried out much activity in the energy sector, mainly because of the work commitments with the European Commission. In 2013, many projects ended, others are still in progress and many new ones began. April was the end date for the project "Shell". "HyFacts", the training project on hydrogen safety ended in July. Other projects continued such as "Hy Lift Demo", a large-scale demonstration project on forklifts with fuel cells; and CODE2 (Cogeneration Observatory and Dissemination Europe 2).
- ▶ The activities organised by FAST also target young people. Among these activities there is the 9th International Competition of scientific photography "When art meets science". FAST also supported the 8th edition of the European Day of science for young people (ESDY).
- ▶ FAST has continued a dynamic collaboration with EEN (Enterprise Europe Network, the most important European Network co-financed by DG Enterprise, to support SMEs).

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### **Netherlands** [www.acti-nl.org/](http://www.acti-nl.org/)

- ▶ For the third time AcTI positioned "Grand Challenges, Innovating for Society" as the central theme of the Innovation Conference. This Conference was held on October 2 in The Hague. The Ministry of Economic Affairs delivered a Keynote Lecture on Innovation.
- ▶ Innovation Conferences are designed to facilitate agreements between important players from the business community, knowledge institutions and government, resulting in strengthening innovation power in the Netherlands. Each year AcTI checks the progress of agreements made earlier and adds new themes as necessary.

- ▶ In order to generate successful innovations, the "golden triangle" connecting Business, Government and Public Research needs to be extended to relevant societal stakeholders in the innovation system, including NGO's and other organisations representing societal concerns. Societies are challenged by huge problems, which result from demographics, aging, climate change, migration and depletion of resources. These challenges are often addressed by non-governmental organisations with broad social support, but are also being considered by politicians and governments, as expressed in the Grand Challenges described by the European Union. The European Commission made these challenges key when defining the ambitious research and innovation program Horizon 2020.

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### **Norway** [www.ntva.no](http://www.ntva.no)

- ▶ NTVA has produced two important reports:
  - "A National Energy Strategy 2013-2017"
  - "Food from the Ocean - Norway's Opportunities".
- ▶ NTVA has organized three seminars:
  - "Safe storage of CO<sub>2</sub> below Longyearbyen, Svalbard?"
  - "Technology for more efficient use of resources in healthcare".
  - "50 years anniversary of Physical Electronics at NTH/NTNU".

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### **Poland** [www.pan.pl](http://www.pan.pl)

- ▶ The Division IV, Engineering Sciences of the Polish Academy of Sciences (PAN), every year organizes or sponsors international conferences and seminars in cooperation with PAN scientific committees as well as local and international scientific and technical organizations. In 2013, 21 such international events were organized.
- ▶ The Centre for Laser Technology of Metals of the Kielce University of Technology and the PAN has developed the fundamentals of laser-vibration technology for heat transfer enhancement in metal elements through increasing their surface coarseness. The technology involves using a laser to melt metal elements; these elements are simultaneously subjected to vibrations to produce solidified structures with increased coarseness. Possible applications include the cooling of electronic components and computers; awards and patents have been obtained.
- ▶ As the number of heart and lung support systems and devices (such as ventricular assist devices (VAD) and respirators) grows each year, it is important to effectively assess and compare their features. The Nalecz Institute of Bio-cybernetics and Biomedical Engineering of the PAN, in collaboration with the Canadian Institute of Clinical Physiology at the National Research Council (IFC CNR), has developed innovative hybrid simulators (patents obtained and pending), whereby numerical models of the cardiovascular and respiratory systems are connected to mechanical support devices (VAD, respirators) by means of impedance converters. Tests of the hybrid simulators' performance, when coupled with simulations of their interaction with heart and lung support devices, have confirmed their reliability; they are accurate tool for testing support devices and help to optimize the application of these devices in varying states of heart and lungs pathology. This research received partial funding from the EU 7th Framework Program.

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### **Portugal** [www.ordemengenheiros.pt](http://www.ordemengenheiros.pt)

- ▶ The Portuguese Academy of Engineering hosted in December the Euro-CASE Annual Conference: "Boosting Innovation in Europe: EU-USA - Why the innovation gap?"

- ▶ PAE has been an active member of the Innovation Platform of Euro-CASE and organized one of its meetings in October.

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### Romania [www.astr.ro](http://www.astr.ro)

- ▶ The ASTR organized the 8th edition of the annual scientific conference "The Days of ASTR", under the theme "Products and Technologies for Sustainable Development", an event with international participation.
- ▶ ASTR, alongside with the Romanian Academy of Agricultural Sciences (ASAS), organized a workshop on "New energy sources in agriculture", with the participation of users (farmers, agro-industrial units) and representatives of Ministries of Agriculture and Environment.
- ▶ ASTR, the General Association of Engineers in Romania (AGIR) and the General Association of Economists in Romania (AGER) organized, during the years 2012 to 2013, a series of conference-debates on developing a "National Project for Economic and Social Modernization of Romania until 2020".

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### Slovenia [www.ias.si](http://www.ias.si)

- ▶ The IAS Council has approved an annual work plan leading to the establishment of a so called "Technology Highway"- a Consensus for Innovative Slovenia.
- ▶ Representatives of IAS have met the President of the Republic of Slovenia for a working meeting and received his general support for 3 major tasks:
  1. Preparing and publishing "IAS Statements about Vision on Development of Economy and Society in Slovenia".
  2. "Puh Engineering Award", an annual award named after a great Slovenian engineer, awarding excellent achievements of Slovenian engineers, and promoting their careers.
  3. Establishing "Bank of Knowledge" with the purpose of maintaining a record of and publishing the most relevant research achievements of Slovenian researchers for Slovenian industry, which would use such basic knowledge or develop it into an end-product.
- ▶ Workshops have been organised by members of IAS to prepare academies' statements on various topics related to innovation, education, research and technological development, and economy, competitiveness, globalisation. These Statements have been distributed to all competent authorities in Slovenia and to IAS members.

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### Spain [www.raing.es](http://www.raing.es)

- RAI has organized more than 30 seminars, conferences and other events. Due to their relevance, some should be highlighted:
- ▶ Seminar "Computational intelligence in the knowledge society".
  - ▶ Seminar "The role of Engineering in the Energy sector: situation and forecast".
  - ▶ Round table "Research, technological development and Engineering".
  - ▶ Workshop "Systems Engineering in the Defence Industry".
  - ▶ Annual awards "Academia Dilecta" (awarded to a company with significant relevance in engineering and technology), and "Young Engineers" (awarded to a young professional with a special engagement in engineering).

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### Sweden [www.iva.se](http://www.iva.se)

- ▶ IVA organized a Seminar: Towards a Sustainable Energy System in Northern Europe.
- ▶ The IVA Annual Meeting in October was preceded by a "Science and Society" mini-symposium.

- ▶ IVA organized a Royal Technology Mission to Brazil, with His Majesty Carl Gustaf XVI. The Chairman of IVA, Mr Leif Johansson, led the delegation.
- ▶ IVA issued a final report on "Innovation Powerhouse Sweden".

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### Switzerland [www.satw.ch](http://www.satw.ch)

- ▶ The electric power system in Switzerland is facing various challenges regarding electrical networks and electricity storage. The transition from traditional to renewable sources presents both a technical as well as an economic and socio-political challenge. SATW helped support this process by launching several studies.
- ▶ "Advanced manufacturing" is on the agenda of most highly industrialized countries. It provides unique opportunities for product production with unprecedented characteristics and precision and enables high-wage countries to produce profitably a small series or single pieces. SATW organized several events on this topic, which attracted scientists from universities and material and process specialists from various companies and industrial associations. The effort of tying basic research and industrial production is being continued.
- ▶ Fostering the interest of young people in Science Technology Engineering and Mathematics (STEM) disciplines remains a high priority for SATW. In 2013, SATW launched many activities (workshops, studies and interactive events with young people). For example, since 2007 SATW has been organizing TecDays, on which students select various modules in the fields of technical and natural sciences instead of attending their routine classes. This allows them to interact with personalities from basic research and industry. During 2013, the success story continued with six TecDays, among them the first bilingual one in German and French. SATW is working on establishing the tradition of TecDays in the Italian-speaking regions of Switzerland.

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### United Kingdom [www.raeng.org.uk](http://www.raeng.org.uk)

- ▶ In March 2013, the Royal Academy of Engineering hosted the first Global Grand Challenges Summit, collaboration with the US National Academy of Engineering and the Chinese Academy of Engineering to encourage the next generation of engineering leaders to focus on the grand challenges which would define the 21st century. Speakers included J. Craig Venter, first sequencer of the human genome, President of Stanford University, John Hennessy, pop star will.i.am, and Microsoft founder Bill Gates.
- ▶ In 2013, the Academy made the inaugural award of the Queen Elizabeth Prize, a global £1m engineering prize that rewards and celebrates the engineers responsible for a ground-breaking innovation in engineering that has been of benefit to humanity. The first prize was awarded by Queen Elizabeth II in June 2013 to five pioneers of the internet and World Wide Web: Robert Kahn, Vint Cerf and Louis Pouzin, for their contribution to the protocols that made up the architecture of the internet, Tim Berners Lee, for the creation of the World Wide Web, and Mark Andreessen, who created the highly influential mosaic browser. More information is available at [www.qeprize.org](http://www.qeprize.org)
- ▶ The Academy created the Enterprise Hub to harness the expertise, insights and networks of Academy Fellows to support the country's most promising engineering entrepreneurs. The Hub aims to accelerate new technology enterprise development by providing funding, mentorship and training, to celebrate successful engineering entrepreneurs, and to improve the climate for technology entrepreneurs within the UK. Further details are available here: [www.enterprisehub.raeng.org.uk](http://www.enterprisehub.raeng.org.uk)

# EXECUTIVE COMMITTEE AND BOARD REPRESENTATIVES

Three major alterations in the Euro-CASE structure were registered during the past year.

► **ARB**

RASAB (KVAB + ARB) has formally withdrawn its participation from Euro-CASE in 2013. Hervé Hasquin, ARB Perpetual Secretary, officially proposed ARB candidacy to become a Euro-CASE member academy. This proposal was accepted by the Board in May 2013, for three years.

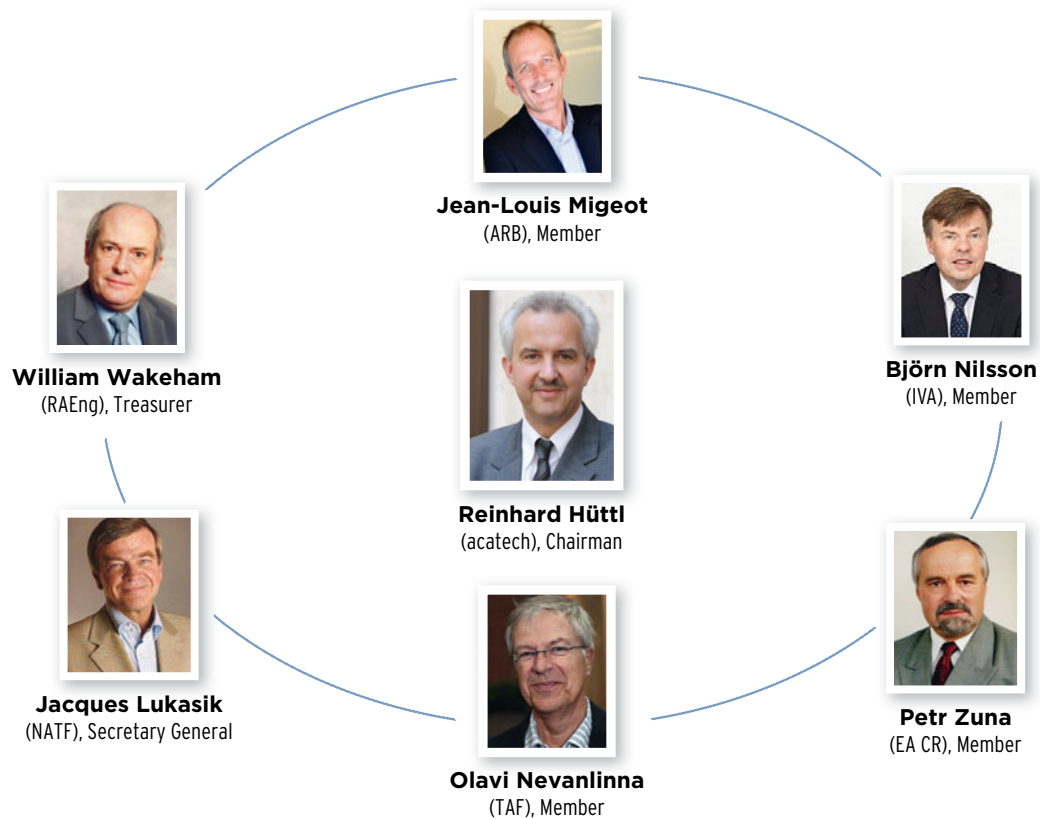
► **Election of the Executive Committee**

As of December 31, 2012, Lena Treschow Torell stepped down from the Chairmanship of Euro-CASE. Reinhard Hüttli, as Chairman, and the Executive Committee below were elected by the Board on May 16, 2013, in Munich, for a term of three years.

► **Re-launching of the Finance Committee**

At the occasion of its May meeting, the Board also confirmed the re-installation of the Finance Committee, and elected to it Sir William Wakeham as Chairman, Rolf Hügli, Jacques Lukasik and Fernando Santana as members.

## EURO-CASE EXECUTIVE COMMITTEE FROM MAY 2013



Members of the Executive Committee are *ex officio* members of the Board. During 2013, members of the Executive Committee met three times, and held two telephone conferences. The Board met twice, on May 16, in Munich (including a workshop on the future strategy of Euro-CASE), and on December 11, in Lisbon, after the Annual Conference.



Board May 2013





Euro-CASE

## BOARD 2013

Member Academies and Euro-CASE Board members in 2013  
(representatives and alternates)

### 2013 BOARD MEMBERS AND THEIR ALTERNATES IN ITALICS:

	<b>Belgium</b>	ARB	<i>Jean-Louis Migeot, Hervé Hasquin</i>
	<b>Croatia</b>	HATZ	<i>Vladimir Androcec, Zdravko Terze</i>
	<b>Czech Republic</b>	EA CR	<i>Petr Zuna, Miroslav Vaclavik, Milos Hayer</i>
	<b>Denmark</b>	ATV	<i>Martin Bendsoe, Lia Leffland</i>
	<b>Finland</b>	TAF	<i>Juha Ylä-Jääski, Olavi Nevanlinna</i>
	<b>France</b>	NATF	<i>Bruno Revellin-Falcoz, Dominique Peccoud, Jacques Lukasik</i>
	<b>Germany</b>	acatech	<i>Reinhard Hüttli, Rudolf Hielscher</i>
	<b>Greece</b>	TCG	<i>Christos Tsatsanifos</i>
	<b>Hungary</b>	HAE	<i>Janos Ginsztler, János Takács</i>
	<b>Ireland</b>	IAE	<i>Michael Higgins, Tim Brick</i>
	<b>Italy</b>	FAST/CISAI	<i>Alberto Pieri</i>
	<b>Netherlands</b>	AcTI	<i>Bertrand van Ee, Henk Dits</i>
	<b>Norway</b>	NTVA	<i>Eivind Hiis Hauge, Hein Johnson</i>
	<b>Poland</b>	PAN	<i>Urszula Wajcen</i>
	<b>Portugal</b>	PAE	<i>Fernando Santana, João Pereira Bento</i>
	<b>Romania</b>	ASTR	<i>Mihai Mihaita, Florin T. Tanasescu</i>
	<b>Slovenia</b>	IAS	<i>Vojteh Leskovšek, Joze Vizintin</i>
	<b>Spain</b>	RAI	<i>Manuel Marquez Balin, Pere Brunet</i>
	<b>Sweden</b>	IVA	<i>Björn Nilsson, Johan Weigelt</i>
	<b>Switzerland</b>	SATW	<i>Arthur Ruf, Rolf Hügli</i>
	<b>United Kingdom</b>	RAEng	<i>William Wakeham, Shane McHugh</i>

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**Text: Euro-CASE**

**Design and realisation: ★ Bronx Agence - [www.bronx.fr](http://www.bronx.fr)**

**Photos credits: Page 2, acatech/T. Ernsting,  
Pages 4, 5, 6, 7, 8, 9, 16, Euro-CASE  
Page 10, Francesco Salvi  
Page 11, JRC, Euro-CASE  
Page 12, Euro-CASE, CAETS**

**Printing: Media Graphic**



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