



Euro-CASE

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

ANNUAL REPORT 2014



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 22 European countries. The Serbian Academy of Engineering Sciences (AESS) joined 21 other national Academies as a member as of January 1, 2015.

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 (more than 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 and organisations.



Vision 2020

“Euro-CASE will be the voice of European excellence in Engineering, Applied Sciences and Technology for the world”

The full text of the Vision 2020 can be found on the Euro-CASE website: www.euro-case.org

Message from the Chairman

Last year, Euro-CASE called for a new phase in independent science- and technology-based policy advice to the European Institutions. Our record of new policy activities this year underlines our strong commitment to partnership with the EU.

The Euro-CASE Innovation Platform concluded its first phase after a productive 2.5 year working period. The recommendations developed by the Platform members on important topics such as innovation financing, public procurement and advanced manufacturing were published in a summary policy paper entitled “European Innovation Policy”. I am pleased that a new Innovation Platform will be launched already in 2015.

The Euro-CASE Energy Platform began its activities in October 2013 and successfully completed its first project on the future of the EU Emissions Trading Scheme. The paper “Reform Options for the European Emissions Trading System” was presented to Jos Delbeke, Director-General for Climate Action, European Commission, and to Ivo Belet, MEP and rapporteur for the EU ETS. The Energy Platform will continue its work in 2015.

The 2014 Annual Conference in Brussels, organised jointly by the Royal Academy of Sciences, Letters and Fine Arts (ARB), Belgium, the National Academy of Science and Engineering (acatech), Germany, and the Royal Swedish Academy of Engineering Sciences (IVA), Sweden, offered an excellent forum to present and discuss the results of both the Innovation and Energy Platforms. The two-day event brought together representatives of the European Institutions, members of the Academies across Europe and various stakeholders from research organisations and industry. I was particularly pleased with the participation of the Presidents of our sister organisations Günter Stock, President of ALLEA, and Jos van der Meer, President of EASAC. Their active participation underlined our joint commitment to collaborate more closely at the EU level. The Conference also marked the continuation of the cooperative dialogue between the European Commission and Euro-CASE. This gives us the opportunity to discuss and implement novel approaches of dialogue formats between science, business and politics in order to feed the newest and most relevant scientific findings into the on-going political debate.

I am also very content that the cooperation agreement with the Joint Research Centre signed in 2012 continues



Reinhard F. Hüttel, Chairman of Euro-CASE

to be productive. At the beginning of 2015, we are jointly organising a high-level Round Table on Digital Privacy – a subject that has lost none of its relevance; it is of increasing importance every day.

In autumn 2014, the EU-US Frontiers of Engineering Symposium was held in Seattle, in partnership between the US National Academy of Engineering and Euro-CASE. It offers outstanding young engineers from the EU and the US the opportunity to exchange views on cutting-edge developments and interact across disciplines. The next cycle will be organised in 2016-2017 and I am thankful that the Technology Academy Finland will sponsor this event on behalf of Euro-CASE.

Finally, I am delighted to welcome to the Euro-CASE family a new member, the Academy of Engineering Sciences of Serbia, and am looking forward to new initiatives and benefits that the two sides will draw from this membership.

Euro-CASE has expanded its activities over the last years, in line with our strategy, and I sincerely thank all the contributing Fellows and the supportive staff of our member Academies that make the work of Euro-CASE possible and fruitful.

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

Reinhard F. Hüttel
Chairman

Content:

Euro-CASE Annual Conference	4
Frontiers of Engineering	8
Euro-CASE Platforms	10
Relations with European Institutions and other international activities.....	14
Member Academies major publications, events and achievements in 2014.....	18
Board representatives and Executive Committee	22
Member Academies and Euro-CASE Board members in 2014	23

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].

2014 Brussels: "Evidence-based Policy Advice and Innovation Policy beyond Horizon 2020" [acatech, ARB, IVA]

2014 ANNUAL CONFERENCE

Evidence-based Policy Advice and Innovation Policy beyond Horizon 2020

December 2-3, Brussels

About 200 guests attended the Euro-CASE Annual Conference on Innovation on December 3 and an Energy and Climate Policies event on the evening of December 2. The Conference was held in Brussels at the Palais des Académies and was jointly hosted by the Royal Academy of Sciences, Letters and Fine Arts (ARB), Belgium, the National Academy of Science and Engineering (acatech), Germany and the Royal Swedish Academy of Engineering Sciences (IVA), Sweden.

During the introductory part of the Conference, on December 3, Presidents of the sister organisations, Günter Stock, ALLEA, Jos van der Meer, EASAC, and Reinhard Hüttl, Euro-CASE, jointly appeared on stage for the first time and proclaimed their commitment to a stronger partnership at the European level. Reinhard F. Hüttl emphasised that today's global challenges could only be met with an interdisciplinary approach and underlined that increased cooperation between the European umbrella organisations of Academies will offer a basis for comprehensive and holistic science- and technology-based policy advice at the European level. Representatives of the European Commission in attendance, including Vladimír Šucha, Director-General of

the Joint Research Centre; Wolfgang Bartscher, Deputy Director-General for Research and Innovation and Anne Glover, Chief Scientific Adviser to President J.M. Barroso, also supported the cooperation of the Academies. It was stressed that the independent science-based policy advice provided by the Academies was very welcome at the European level in order to strengthen the evidence-based nature of political decisions. Reinhard F. Hüttl concluded that the meeting sends a signal for increased cooperation and a joint structured dialogue between the European Commission and the European umbrella organisations of Academies.



ROYAL SWEDISH ACADEMY OF ENGINEERING SCIENCES



ACADÉMIE ROYALE
des Sciences, des Lettres et des Beaux-Arts
DE BELGIQUE





G. Stock, A. Glover, R. Hüttel, W. Burtscher, V. Šucha, J. van der Meer

European Innovation Policy, as the central topic for Euro-CASE

In the afternoon, the Conference was focused on European innovation policy for the period following Horizon 2020. A recurring claim was that Europe needs a stronger “entrepreneurial spirit” and a risk-oriented culture of innovation. These were also core issues of the recent Euro-CASE “Policy Paper on European Innovation Policy”, which was presented by Björn Nilsson, President of IVA and Chair of the Euro-CASE Innovation Platform. Other high-level guest speakers included Esko Aho, former Prime Minister of Finland, Bruno Revellin-Falcoz, Board and Executive Committee member of the EIT, Luc Soete, Chairman of the High Level Group RISE at the European Commission, Randall S. Wright, MIT Industrial Liaison Program, and Otto C.C. Lin, Hong Kong Academy of Engineering Sciences. They shared with the audience European, American and Asian approaches to innovation policy.

Summing up the Annual Conference, Academy Fellows Karl Klingsheim (NTVA), Jakob Edler (acatech) and Björn Nilsson (IVA) discussed with Peter Dröll, from the Directorate General RTD and Marisa Matias, MEP from Portugal, specific questions on the future of European innovation policy such as increased industry participation, internationalisation, further simplification of grant application procedures and a systemic implementation of support instruments across Europe within the future Framework Programmes for Research and Innovation.



Esko Aho



Otto C.C. Lin



G. Stock, A. Glover, R. Hüttel, J. van der Meer

Evening Event “European Energy and Climate Policies beyond 2030”

The evening event before the Annual Conference was dedicated to European Energy and Climate Policies beyond 2030. Euro-CASE members met with representatives of the European Institutions to present the work of the Euro-CASE Energy Platform and to discuss the future of European energy and climate policy.

Jerzy Buzek, Polish MEP and chairman of the Industrial Research and Energy Committee (ITRE), opened the first panel entitled “After the Council Decision: Are European Energy and Climate Policies ambitious enough? What are the consequences for the Conference of the Parties (COP 21) on Climate in December 2015 in Paris?”. In the panel discussion which followed with Dominique Ristori, Director-General of the DG Energy, and Vincent Mages, Vice President Climate Change Initiatives, Lafarge, Convener of the “Energy and Climate Change working group” of the European Round Table of Industrialists (ERT), representing an industrial perspective, Bo Normark, co-chair of the Euro-CASE Energy Platform, it was pointed out the need for short-term solutions from EU policy makers to prepare markets of the future.

In a brief statement, Peter van Kemseke, Member of the Cabinet of the EC Vice President for Energy Union, Maroš Šefčovič, outlined the concept of a European Energy Union and stressed the importance of such a Union for Europe. In the second and final panel, Academy Fellows Gianluca Alimonti (FAST), Bertrand van Ee (AcTI) CEO Climate-KIC, Hans Hvidfeldt Larsen (ATV) and Peter Lund (TAF), Chair of EASAC’s Energy



J. Buzek, V. Mages, D. Ristori, G. Edmondson



D. Ristori, J. Buzek, J. Lukasik, R. Hüttl

Programme, debated with the audience the topic of the “European Energy and Climate Policies beyond 2030”. One of the messages which emerged was that new business models such as “green growth” might be an option for the future, but in order for this to happen, more distinct concepts must be developed.

2015 Annual Conference Den Haag

The Euro-CASE Annual Conference 2015 is planned to take place in Den Haag, on November 2nd, 2015. It will be organised by AcTI on the subject of “Engineering Smart Cities of the Future”. To finalise the programme, the organisers are considering a strong interaction with the presently running Euro-CASE Innovation Platform.

AcTI
technologie&innovatie

Ridderzaal [Knight’s Hall / Rittersaal],
Den Haag [The Hague], dated 1248

Frontiers of Engineering



2013/2014 Cycle

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.

On November 10-12, 2014, the fourth EU-US Frontiers of Engineering symposium was hosted by the Boeing Company in Seattle, Washington. NAE partnered with Euro-CASE to carry out the event with organizational support for the EU side provided by the National Academy of Technologies of France (NATF). NAE member Christodoulos Floudas, Stephen C. Macaleer '63 Professor in Engineering and Applied Science in the Department of Chemical Engineering at Princeton University, served as the US co-chair. Dr. Yves Caseau, NATF Fellow and Head of Digital Agency with AXA, was co-chair for the EU side.

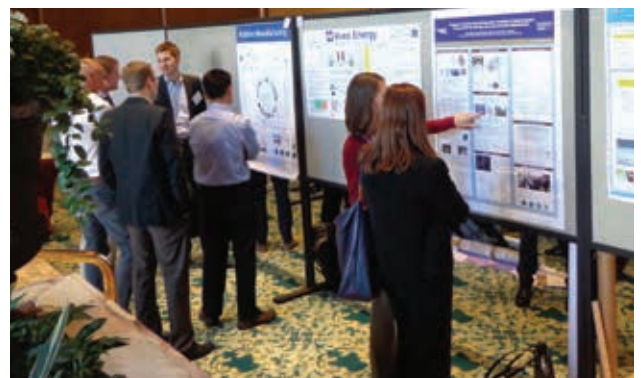
The meeting brought together approximately 60 engineers, ages 30-45, from US and European universities, companies, and government labs for a 2-1/2-day meeting, where leading-edge developments in four topics—Smart Homes, Energy Storage Across Scales, Atoms to Airplanes: Designer/Engineered Aerospace Materials, and Protein Design for Therapeutic and Biotech Applications—were discussed. 30 European participants attended from 10 EU countries: Germany, France,

Italy, United Kingdom, Belgium, Luxembourg, Czech Republic, Finland, Denmark, and Norway. The session on “Smart Homes” discussed how recent developments in miniature sensors, wireless sensors, and mobile computing create opportunities to instrument homes with systems that understand human behaviour and use that information to support meaningful improvements in everyday life. The speakers described emerging smart home technologies and provided their perspectives on how these technologies could transform our homes from passive living spaces to interactive, supportive environments. Talks highlighted the required radio system requirements to ubiquitously connect smart home objects to the cloud with a brief review of existing wireless technologies; a new generation of electricity and water sensing systems that are capable of providing consumption data down to the individual appliance or device from single sensing points and a new class of low-power wireless sensors that use the electrical wiring in a building as an antenna to increase range and lower the power consumption of wireless sensors; smart environments for decision support in health care and ways in which smart home technologies might lead to greater energy efficiency and sustainability.

The transition of energy systems from fossil to renewable sources presents many challenges, particularly the intermittency of renewable energy, which requires large reserves of energy storage. The session “Energy Storage across Scales” described the potential of new battery innovations and their role in the coming decade



Boeing's Everett plant visit



Poster Session

as well as the untapped potential and scope of chemical energy storage technologies that could transform chemical production and fuels. The first two talks covered battery technologies. The first presenter discussed batteries for grid-scale energy storage with a focus on using the chemical compound Prussian blue to meet the challenges of both power and energy applications. This was followed by a talk on how novel materials for battery separators are enhancing the thermal stability of Li ion batteries to permit greater safety and energy and power density. The second half of the session covered chemical energy storage technologies with talks on 1) different options of hydrogen production and the engineering challenges for the dynamic operation of chemical processes linked to intermittent energy sources, and 2) how biogenic feedstocks can be used to synthesize suitable fuels as liquid energy storage systems.

Aerospace engineers strive to find the right materials and manufacturing processes for airplanes to make them lighter, stronger, more durable, and easy to manufacture. Presentations in the “Atoms to Airplanes” session described key components of this endeavour: multifunctional materials development (e.g., nano-enhanced composites and intelligent materials with embedded sensors), advanced manufacturing technology, and multi-scale simulation. The speakers reported on harnessing the unique properties of nanoscale graphene structures to develop multifunctional composite structures; the use of cellular architectures across scales to develop a new class of lightweight materials with unprecedented structural properties; progress and challenges in the modelling of fracture of composite materials across scales; and how the emergence of integrated multi-scale modelling methodology for aircraft could lead to highly novel designs.

In the last decade, protein design has seen important methodological advances. Methods have been used to redesign natural enzymes to extend their fields of application, as well as design novel proteins from scratch. And these technologies have been integrated in rational engineering approaches for therapeutic purposes. The final session of the meeting, “Protein Design for Therapeutic and Biotech Applications”, included three presentations on the topics of designing novel enzymes for reactions not catalysed by naturally occurring biocatalysts, their applications, and their impact on a sustainable future; new concepts and software tools for efficient and rational design of enzymes for biotechnological applications; and redesigning biological systems to understand spatial and temporal regulation of the fundamental processes of life, and how this impacts control of kinase activity in living cells.

The EU-US FOE included a poster session on the first afternoon, which served as both an icebreaker and an opportunity for all participants to share information about their research and technical work. On the second afternoon the group was privileged to have a VIP tour of Boeing’s Everett plant, the largest building in the world by volume where Boeing’s 747s, 767s, 777s, and the new 787 Dreamliner are assembled. This was followed by a stop at the Museum of Flight where attendees viewed exhibits of 150 historic air- and spacecraft and other aviation artefacts before having dinner in the museum’s Red Barn, Boeing’s original manufacturing plant.

The dinner speech on the first evening was given by Dr. Greg Hyslop, Vice President and General Manager of Boeing Research and Technology. His presentation, “Driving Innovation: The Future of Materials Development”, outlined the history of aerospace materials, the advances brought about by the use of composites, concurrent technologies driven by new materials development, and what needed to be done to accelerate our understanding and use of those materials. He closed his talk by emphasizing the critical need for a skilled workforce and technology pioneers to continue innovation in aerospace materials—something needed in all fields of engineering.

Financial support for the symposium was provided by The Boeing Company, The Grainger Foundation, US National Science Foundation, NATF, and various sponsors of EU attendees’ travel. A detailed program and abstracts can be found on the NAE website: www.naefrontiers.org/Symposia/EU-USFOE.aspx

2016/2017 Cycle

The next EU-US FOE will be held October 16-18, 2016, in Finland with the Technology Academy Finland taking on the organizational role for the EU/Euro-CASE side. Chris Floudas will continue as the US co-chair of the organizing committee and Harri Kulmala, Chief Executive Officer of the Finnish Metals and Engineering Competence Cluster in Tampere, Finland, will serve as the EU co-chair, on behalf of Euro-CASE.

NAE has been hosting an annual US Frontiers of Engineering meeting since 1995. For more information about the symposium series or to nominate an outstanding engineer to participate in future Frontiers meetings, contact Janet Hunziker at the NAE Program Office, at jhunziker@nae.edu.

TAF

TECHNOLOGY
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FINLAND

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.

Platform's Final Reports, after Euro-CASE Board's approval, are listed on the Euro-CASE website. In recent years, "Transport and Mobility" Platform accomplished its work having dealt with four innovative topics that have a strong impact on European Union competitiveness: Freight Transport Logistics and Taxation in Europe, Intelligent Systems for Freight Transport, Priority of Passengers vs. Freight Transport and Green Corridors. These topics concern not only competitiveness but contribute also to meeting other objectives such as cleaner environment, security of energy supply, transport safety and security.

Currently, three new Platforms on "Innovation", "Energy" and "Engineering Education" are under way and will continue their work in 2015.

Euro-CASE Innovation Platform

Innovation remains as important as ever to secure economic growth in the EU. With Horizon 2020 and the Innovation Union being a flagship initiative of the Europe 2020 growth strategy, the topic of innovation continues to be high on the political agenda.

With the intention of proactively providing independent science-based advice to the EU and European Institutions on innovation issues, Euro-CASE launched an Innovation Platform in November 2011. During its 2.5 year working period, the Platform members (representing 12 Academies), convened several times under the leadership of acatech and IVA and drafted Position Papers on Innovation Procurement, EU-Public-Private Partnerships, Financing Innovation and Transforming Manufacturing, along with two additional Discussion Papers on Innovation & Changing Industry Structures and Boosting Innovation in Europe: Comparison USA-EU.

At the final meeting of the Innovation Platform in Paris on March 17, 2014, its members decided to publish a summary Euro-CASE Policy Paper entitled “European Innovation Policy”. This paper, which can be found on the following website: <http://tinyurl.com/nnc2qam>, concisely presents the policy recommendations developed by the Platform in the above mentioned areas. It recommends a change in the innovation culture and the way

entrepreneurial activities are valued in Europe as pre-requisites to make Europe the most innovative region in the world. According to Euro-CASE, the European Union as well as the Member States should act resolutely in making their innovation systems more competitive. Europe cannot and should not compete on the basis of cheap labour. Therefore, overarching topics such as embracing technological change, driving the next industrial revolution, and supporting a culture of innovation among Academies and entrepreneurs alike are important steps for Europe’s competitiveness. A cultural change that values innovation and entrepreneurial activities is seen as a step towards unleashing much of today’s unused potential. This is even more important as European industries are facing increased competition from countries all over the world.

The Euro-CASE Policy Paper was presented to a large number of stakeholders from academia, politics and business on the occasion of the 2014 Annual Conference in Brussels. The Innovation Platform’s work served largely as a basis for the thematic orientation of the 2014 Annual Conference on December 3.

Following the approval of the Euro-CASE Board to continue the Innovation Platform, its members will be providing comprehensive analysis and science- and technology-based policy recommendations on innovation related topics to the European Institutions in 2015.



Innovation Platform meeting, Paris, March 17, 2014



Energy Platform, EU ETS Workshop, Brussels, February 13, 2014

Euro-CASE Energy Platform

The EU's climate and energy targets to reduce EU domestic greenhouse gas emissions by at least 40% below the 1990 level and to increase the share of renewable energy to at least 27% of the EU's energy consumption by 2030 are well known and ambitious. At the same time a well-designed European market for energy is also crucial for guaranteeing safe, sustainable and affordable energy for Europe's consumers and industries. The scale of these targets has brought energy policy to the top of the agenda for almost all of the Euro-CASE member Academies. The Euro-CASE Energy Platform is based at the interface between science and politics and showcases science- and technology-based policy options for the future of European energy policy. Co-chaired by Ottmar Edenhofer, acatech, Germany, Bernard Tardieu, NATF, France and Bo Normark, IVA, Sweden, the Platform (representing 16 Academies) has focused on two major topics since its launch in October 2013: reform options for the European Emissions Trading System (EU ETS) and technological requirements for energy policies at EU and national levels.

After the kick-off event in 2013, members of the Energy Platform met in Brussels, in February 2014, to discuss the future of the EU ETS. In the presence of Jos Delbeke, Director General of the EC DG Climate Action and prominent international scholars such as Robert N. Stavins (Harvard University) and Denny Ellerman (MIT), the workshop registered recent EU ETS price drops and presented options for reform. The workshop

was well received by 70 participants from 20 countries in Europe, North America and Australia drawn from research communities, NGOs, industry and the European Commission.

The Euro-CASE reform proposal suggests implementing a price collar for the CO₂ price to solve the problems related to the long-term steering effects of the current EU ETS. The price collar is likely to reinforce credibility and reliability of the price signal and help stabilise investors' expectations. The paper also proposes to integrate the heat and transport sector into the system, which so far is limited to the power sector and some industries. Ottmar Edenhofer, Co-Chair of the Energy Platform and Co-Chair of the IPCC Working Group III "Mitigation of Climate Change" presented the Euro-CASE Policy Position Paper on "Reform Options for the European Emissions Trading System" to Jos Delbeke and Ivo Belet, MEP, rapporteur for the EU ETS. This document can be found on the following website <http://tinyurl.com/o83vf45>.

The last Platform meetings in May (Stockholm) and September (Brussels) then focused on the future European energy systems and their implications for electricity production, transmission and storage.

In December 2014, the Platform's work served as a basis for the Euro-CASE Annual Conference Evening Event on Energy and Climate. Considering the critical importance of energy in Europe, the Energy Platform will continue its work in 2015.



J. Delbeke and O. Edenhofer



I. Belet and O. Edenhofer

Euro-CASE Engineering Education Platform

The first meeting of the Platform took place in Prague on May 28, under the leadership of Petr Zuna (Vice President EA CR). The platform is currently composed of representatives from 8 Academies.

It was decided at this meeting to focus on:

- Comparison and harmonization of various engineering diplomas in Europe.
- Increasing interest in technical education, in particular, supporting the interest of the young generation of boys and girls in engineering education.
- A more precise definition of the term “Engineering Education (EE)”: what EE in Europe could look like 10 years from now and what competences should EE include.
- Mobility of students and teachers in engineering.

A “Round Table” workshop was organised in Prague in November 2014, focusing on the “orientation and status of engineering education in the nearest 10 years” and “how to support the interest of the young generation of boys and girls in engineering education”.

The conclusions of the “Round Table” are available on the website: <http://tinyurl.com/l69wqss>. A new workshop is planned for May 2015 in Prague.





Relations with European Institutions and other international activities

Euro-CASE is convinced that the EU needs improved innovative capabilities to help solve the grand challenges of the world, including for example climate evolution, energy and water resources, rapidly expanding information and communication technologies along with related digital privacy issues, and dealing with ageing population.

During the Euro-CASE Board meeting in May 2013 in Munich, it was decided to reinforce Euro-CASE strategy to provide independent, science- and technology-based policy advice to European Institutions, in order to support policy makers in reaching more evidence based political decisions. At the same meeting, the Board also agreed on the “Euro-CASE Guidelines on Advising Policy Makers and Society” which was an important step towards transparent working rules within Euro-CASE.

Aware that such a science- and technology-based policy advice has often strong links to many societal, including health issues, Euro-CASE is now entering into cooperation with four other sister consortia. These partner organisations, which are AE (Academia Europaea), ALLEA (All European Academies), EASAC (European Academies Science Advisory Council) and FEAM (Federation of European Academies of Medicine), offer full spectrum of competencies with more than 10 000 of the most eminent European experts in all scientific disciplines from the social sciences and humanities, the natural sciences, the technical sciences and medicine.

Interaction with Euro-CASE's sister organisations

The sister organisations AE (Academia Europaea), ALLEA (All European Academies), EASAC (European Academies Science Advisory Council), FEAM (Federation of European Academies of Medicine), together with Euro-CASE, intend to strengthen their collaboration in order to provide an independent, interdisciplinary science- and technology-based advisory mechanism to the European Institutions, made up from the joint forces of the best scientists, engineers, social science experts and physicians in Europe. For that purpose, they have initiated discussions in 2014 which led to a decision reached by five Presidents to sign a Memorandum of Understanding during the first quarter of 2015.

European Foresight process

In 2014 the European Commission started a process to reorganise the European Foresight process. Euro-CASE nominated eight experts to two-day workshops “2030 Science and Technology Foresight - what's in it for society” in March and April, organised by the JRC and chaired by Anne Glover, Chief Scientific Adviser to the President Manuel Barroso. The outcome of the workshops fed into the EU-President's Science & Technology Advisory Council (STAC) and the Lisbon Conference “The Future of Europe is Science”, October 2014, Lisbon.

Other relations

In addition, over the past year, Euro-CASE has pursued and intensified relations with the European Commission, European Parliament and with other Institutions. Academies' individual members, representing Euro-CASE, have participated in numerous international conferences and events.

European commission:

- DG Research and Innovation (DG Robert-Jan Smits, Deputy DG Wolfgang Bartscher)
- DG Energy (DG Dominique Ristori)
- DG Climate Action (DG Jos Delbeke)
- DG Enterprise and Industry (DG Daniel Calleja)
- DG Connect (Deputy DG Zoran Stančić)
- Joint Research Centre (DG Vladimír Šucha)
- Chief Scientific Adviser to the President of the European Commission, M. Barroso (Anne Glover)

European parliament:

- DG EPRS / STOA (Theodoros Karapiperis, Scientific Foresight)
- STOA (Chairman Paul Rübig, MEP)



R. Hüttl, G. Stock and J. van der Meer



Workshop EU foresight, Brussels, March and April, 2014



B. Nilsson, J. Lukasik,
R.-J. Smits [DG Research & Innovation] and R. F. Hüttl

Other institutions on the European level:

- AE, Academia Europaea (President Sierd Cloetingh), www.ae-info.org
- ALLEA, All European Academies (President Günter Stock, Executive Secretary Matthias Johannsen) www.allea.org
- EASAC, European Academies Science Advisory Council (President Jos Van der Meer, Executive Director Christiane Diehl, Head of EASAC's Brussels Office Sofie Vanthournout), www.easac.eu
- FEAM, Federation of European Academies of Medicine (President Dermot Kelleher, Executive Director Laurence Legros), www.feam-site.eu/cms/

European Commission

- EIRMA, European Industrial Research Management Association (Programme & Members Relations Manager Camille Roy), www.eirma.org
- EIT, European Institute of Innovation and Technology, (Chairman Peter Olesen, Executive Committee member Bruno Revellin-Falcoz), www.eit.europa.eu
- ENGITECH, Science Europe Engineering Scientific Committee, (President Igor Emri), www.scienceeurope.org
- ERC European Research Council (President Jean-Pierre Bourguignon), www.erc.europa.eu

International events with participation of Euro-CASE representatives:

- March/April: “2030 science and technology foresight - what’s in it for society?”
- June: “Key Enabling Technologies (KETs) Skills Initiative”: Internal DG ENT workshop
- June: “Euro-CASE within the European Innovation Strategy” Hong-Kong Academy of Engineering Sciences (HKAES) in Hong Kong
- September: “Science, Democracy & Media”, Atomium Culture meeting with, among others, Valéry Giscard d’Estaing, Jerzy Buzek, Neelie Kroes, Anne Glover
- October: “The Future of Europe is Science”, JRC meeting with President Barroso, Commissioner-Elect C. Moedas and various DGs in Lisbon
- November: Meeting with the Academy of Technical Sciences of Romania (ASTR) in Sibiu (Romania), “Euro-CASE: present activities and future strategy”
- November: “Falling Walls” in Berlin
- November: Science | Business Conference: “The EU Energy Challenge: Can innovation fill the gap?”
- December: Portuguese Academy of Engineering: “Engineering and Innovation”

International Council of Academies of Engineering and Technological Sciences (CAETS)

www.caets.org

The Annual meeting of CAETS was organised by the Chinese Academy of Engineering in June 2014, in Beijing, under an overall conference title: “The Future of Mankind”. Jacques Lukasik, Secretary General, along with few other Euro-CASE representatives, attended this Annual meeting at which J. Lukasik had the opportunity to present Euro-CASE activities and strategy. Fifteen out of 26 CAETS members also participate in Euro-CASE.

The 2015 Annual meeting will take place October 12-15 in New Delhi and will be organised by the National Academy of Engineering of India. Its main topic will be “Pathways to Sustainability: Energy, Mobility and Healthcare Engineering”.

It is planned that the Royal Academy of Engineering (UK) will organise the 2016 meeting in London, focusing on the « Role of Engineering in the Developing World ».



2014 CAETS Convocation, Beijing, June 1-5

Euro-CASE honoured by the Portuguese Academy of Engineering

In October, Euro-CASE was elected as an Honorary Member of the Portuguese Academy of Engineering. The ceremony of bestowing the insignia took place in the Cultural Centre of Belem, in Lisbon, on December 19. After the Portuguese Association of Engineers, Euro-CASE is the second institution (and the first international institution) to be recognized by the PAE.



Maranha das Neves, C. Pimenta, J. Lukasik, A. Lencastre, F. Santana

Member Academies publications, major events and achievements in 2014

Euro-CASE consolidates member-Academies' public reports, limited to titles and their English abstracts. Currently, there are more than 200 reports listed. This database of publications, which can be consulted on www.euro-case.org, is classified according to standard themes such as: Energy and Climate Change, Mobility and Transportation, Biotechnologies, Technologies and Health, ICT... Detailed information for each Academy can be found on their web sites.

Belgium

www.academieroyale.be

motivating more young people to choose a career in Science and Technology. The "Engineer the Future" initiative is supported by large companies, educational institutions and organisations.

Croatia

www.hatz.hr

- A project "Croatian Technical Encyclopedia" was launched with the participation of the Croatian Academy of Sciences and Arts and the Croatian Academy of Engineering (HATZ).
- Scientific Workshop "Horizon 2020/Program Space: Position and Inclusion of the Republic of Croatia" was organized by the Croatian Academy of Engineering and the Croatian Agency for Mobility and EU Programs, Zagreb.
- Annual Scientific Conference on "Printing & Design 2014" was prepared by the HATZ Center for Graphical Engineering and the HATZ Department of Graphical Engineering.

Czech Republic

www.eacr.cz

- Together with the Czech Medical Academy (partners in the Academy Consortium), EA CR hosted a Conference presenting significant achievements in cooperation between Engineering and Medical Sciences and their common contribution to the progress of number of medical fields in the Czech Republic (Prague, 25 June 2014).
- EA CR held an international workshop on "Financing Innovations in the Czech Republic" reviewing the recommendations of Euro-CASE Position Documents and Policy Paper on Financing Innovation and the prospects of their implementation in the Czech Republic. (Prague, 14 October 2014).
- Round Table Meeting was held on Engineering Education to discuss on the national level two main issues identified by the Euro-CASE Platform on Engineering Education.

Denmark

www.atv.dk

- Mentoring programme was set up for mid-sized companies with growth potential: 20 businesses volunteered for the programme, and each company has a member of the Academy assigned to it as mentor.
- Educational Barometer for University Education: ATV published a report which demonstrated how quality and relevance of higher education can be measured on objective criteria such as employment rates, scientific standard and salaries for alumni. It was launched at a conference and subsequently sent to decisions-makers; it also got good coverage in the press.
- Technology as a driver for industrial growth. Debate at ATV's Annual Meeting with participation of the Minister for Higher Education and Science, Ms. Sofie Carsten Nielsen.
- Engineer the Future: ATV joined a new initiative which aims at

Finland

www.technologyacademy.fi

- Millennium Technology Prize. The 2014 Millennium Technology Prize, worth one million Euros, was awarded to Prof Stuart Parkin. He received it in recognition of his discoveries which have enabled a thousand-fold increase in the storage capacity of magnetic disk drives. Parkin's innovations have led to a huge expansion of data acquisition and storage capacities, which in turn have underpinned the evolution of large data centers and cloud services, social networks, music and film distribution online.
- Millennium Pavilion. In conjunction with the Millennium Technology Prize ceremonies, a total of 23 technology related events were organized over a period of 17 days. The events attracted over 8000 people into the Millennium Pavilion, which was located at the heart of Helsinki. The scope of the events included an innovation contest for primary school children, a three-day games event for teenagers, highlights of scientific projects at universities, and seminars on intelligent cities and work in the future.
- Millennium Youth Camp 2014. The International Millennium Youth Camp was organized in Finland for the fifth time on June 4-11 2014. The camp hosted 59 talented young people, 16-19 years old, from 29 countries. The purpose of the event is to give the participants an overview of Finnish expertise and top-level research in the natural sciences, mathematics and technology and give them an opportunity to network with each other.
- Technology Days. A science event intended for the general public was organized for the fourth time. The themes of the events have now covered the four elements of Aristoteles: earth, water, fire and in 2014 air.

France

www.academie-technologies.fr

- The National Academy of Technologies of France published reports in the following areas: Energy - thermal regulations, heating networks, methane; Impact of ICT on worldwide energy consumption; Health - synthetic biology, genomics, bioinformatics; Industry: renaissance of the industry in France.
- The Annual seminar was devoted to the analysis of the appropriation of technologies by a maximum number of people in society.
- Alain Bugat was elected President for the period 2015-2016, succeeding to Gerard Roucairol.

Germany

www.acatech.de

- The “Innovation Dialogue” with Chancellor Angela Merkel focused this year on “International benchmark innovation systems / STEM education as an innovation policy challenge (STEM = science, technology, engineering, and mathematics).”
- Close to 600 guests attended acatech’s Annual Conference in Berlin. Johanna Wanka, Federal Minister of Education and Research, delivered a keynote speech.
- 2nd National STEM summit: Along with 28 members of the German “MINT Forum”, acatech is committed to strengthening education in the fields of science, technology, engineering and mathematics (STEM).
- 350 experts discussed strategies for a successful turnaround in energy policy (“Energiewende”) at the Agenda Congress of the “Energiewende Research Forum” which is jointly coordinated by acatech, IASS and the Max Planck Society.

Greece

portal.tee.gr/portal/page/portal/INTER_RELATIONS/english/role

Hungary

www.mernokakademia.hu

- A symposium was organized together with the TÜV Rheinland to celebrate the 25th anniversary of the Hungarian Academy of Engineering.
- Joint seminar of the Hungarian-Korean Technical Cooperation Foundation on Materials Science and Nuclear Industry, focussed on new methods of organising surface transport.
- Prof. János Ginsztler was re-elected President of the HAE and Prof. János Takács was re-elected Secretary General.

Ireland

www.iae.ie

- “Called to Serve”: Joint publication, with Engineers Ireland, of biographies and Presidential Addresses of Presidents of the Institution of Engineers of Ireland, over the period from the establishment of the Institution in 1835 to 1969, printed in book format.
- IAE Response to Green Paper on Energy: The submission to Government deals with the subjects of failures in EU Energy Policy, National Competitiveness, Electricity Sector, Natural Gas, Potential for Energy Conservation and Efficiencies and Low-Carbon Transport. It concludes with a summary of key issues that require to be addressed in the formulation of a new national energy policy in the very different economic circumstances now prevailing in Ireland and the EU compared with the outlook in 2007, when the Government published its Energy Policy Framework, “Delivering a Sustainable Energy Future for Ireland”.
- Policy Advisory – Towards Low-Carbon Transport in Ireland: Recommendations for national policy review based on a review of improved engine efficiencies, IT impacts, higher occupancy levels and greater utilisation of existing rail assets.
- Manufacturing – The Future of Manufacturing in Ireland – Supporting Working Papers: The report consists of a summary of papers drawn from fuller working papers, prepared by the Manufacturing Standing Committee, based on extensive consultations with interested stakeholders and reviews of national and international data and statistics.

Italy

www.fast.mi.it

- Environment: The 29th edition of “Biological Sewage Treatment Plants”, which is a basic course on the management of processes, took place. Other courses were “Purification of industrial wastes” and “Environmental evaluation activity”.
- Much activity has been carried out in the energy sector, mainly because the work commitments with the European Commission. In 2014 two projects ended, others are still in progress. July was the end date for the project “Hy Lift Demo”, a large-scale demonstration project on forklifts with fuel cells; and in December CODE2 (Cogeneration Observatory and Dissemination Europe 2) ended. FAST is again working on projects on hydrogen and fuel cells co-financed by the European Commission: Alkammonia, Don Quichote, HyResponse, H2Trust, HyLiftEurope, Power Up.
- Targeting young people FAST organised the science contest “I giovani e le scienze”, as the Italian selection event for the 26th European Union Contest for Young Scientists.
- Also in 2014 FAST has continued a dynamic collaboration with EEN (Enterprise Europe Network, the most important European Network co-financed by DG Enterprise, to support SMEs): workshops, seminars, brokerage events, IPR assistance ...

Netherlands

www.acti-nl.org

- The Innovation Conference 2014 was held on 5 November in The Hague. The Innovation Lecture of the Ministry of Economic Affairs was part of the Innovation Conference. The theme of the conference was: “Smart Cities of the Future”. The National Icon Awards were presented by the Minister of Economic Affairs, in the presence of King Willem Alexander of the Netherlands.
- The Innovation Conferences are intended to reach agreements between important players from the business community, knowledge institutions and government resulting in capacity strengthening innovation in the Netherlands. Each year ActI checks the progress of agreements made earlier and adds new themes as necessary.
- In order to promote cooperation in engineering and technological sciences between the Netherlands and China, the Netherlands Academy of Technology and Innovation and the Chinese Academy of Engineering signed a Memorandum of Understanding. The ceremony was held in Beijing, 2 June 2014. Both Academies will facilitate cooperation between specialists in engineering and technical sciences in academia and industry through study visits, joint seminars and workshops and exchange of information.

Norway

www.ntva.no

- The Norwegian Academy of Technological Sciences (NTVA), in cooperation with the Norwegian Academy of Science and Letters (DNVA), hosted a symposium in Oslo “Medical Technology – Meeting Tomorrow’s Health Care Challenges.” Mr Bent Hoie, Minister of Health, gave the introductory talk. There were all together eight speakers and 165 participants. A printed summary can be ordered from NTVA: NTVAmail@ntva.ntnu.no
- NTVA organized a one-day seminar in Trondheim with 10 Scandinavian invited speakers on technical and science-based knowledge for prevention of, and reaction to, damage caused by natural disasters resulting from climate change.

- NTVA, in cooperation with the Norwegian Society of Graduate Technical and Scientific Professionals (Tekna), organized a seminar in Oslo on Low Energy Nuclear Energy (LENR). The aim of the seminar was to promote knowledge on the progress in this controversial but potentially important research field. The main speaker was Dr Michael McKubre from the Stanford Research Institute, California, USA.

Poland

www.pan.pl

- The Division IV Engineering Sciences of the Polish Academy of Sciences every year organizes or sponsors international conferences and seminars in cooperation with PAN scientific and technical organizations. In 2014 the following international events were organized: Forum Acusticum; XV International Conference on Electron Microscopy EM2014; XXI Fluid Mechanics Conference; IEEE Intelligent Systems IS'14, Seventh International Conference on Intelligent Systems 2014; XII International Symposium on Explosive Production of New Materials: Science, Technology, Business and Innovation EPNM-2014; 51st Symposium on Physicochemical Problems of Mineral Processing; 20th International Scientific and Technical Conference, KONTECH on Advanced Forming Technologies and Nanostructured Materials; International Symposium of Electric Machines; XV International Symposium "Heat Transfer and Renewable Sources of Energy, HTRSE-2014".
- PAN organized in November in Warsaw a conference entitled: "The Reality of Climate Change – worse than we thought? The latest findings of the Intergovernmental Panel on Climate Change" (IPCC). A Seminar on the perspectives of scientific cooperation between Poland-Italy, took place in November, in the Scientific Centre of the Polish Academy of Sciences in Rome.

Portugal

www.ordemengenhheiros.pt

- 14 new members were elected during 2014, including the EC Commissioner for Research, Science and Innovation, Carlos Moedas, and the UN High Commissioner for Refugees, António Guterres. Euro-CASE was elected PAE International Honorary Member.
- PAE Day Ceremony. On 2014 December 19th PAE Day was commemorated in a formal session for Insignia delivery to new members and the institution of Euro-CASE as Honorary Member. The Session was attended by Euro-CASE Secretary General, Professor Jacques Lukasik, who received the Insignia of Honorary Member. Professor Sir William Wakeham, PAE Member presented a communication on the role of a National Academy of Engineering in supporting industrial and innovation strategies - A UK perspective.
- On 2014 December 31st the Academy accounted the following Members: 90 Effective Members; 47 Emeritus Members; 5 Non-Resident Members; 3 Honorary Members

Romania

www.astr.ro

- On November 6-7, in Sibiu, the Academy held the 9th in its series of internationally significant scientific conferences "The days of the Academy of Technical Sciences of Romania" under the theme "Inclusion oriented Sustainable Development". The events were attended by specialists from academic, research, industry and economy environment, and showcased superior results obtained

in the capitalization of resources, the development of smart-grid networks, nanomaterials and nanotechnology, environment and energy. Referring to energy, Romania has over 3,000 MW in wind turbines and about 1,000 MW in solar systems, sources connected to the national power grid and addressed with priority energy system safety, the operating conditions and the development of new systems storage to mitigate the intermittency.

- The conference was attended by Euro-CASE Secretary General, Jacques Lukasik, who gave a communication on the role of Euro-CASE and sister European Academies of Science and Technology in the development of a dialogue with European political institutions.
- As co-organizer, the Academy participated in international and national scientific conferences and events. An international event was FOREN held in Bucharest in June. Organized every two years, FOREN is already being recognized as the most important multi-energy event in Central and Eastern Europe, gathering more than 1000 participants. The Forum attracts top officials from ministers, governments, academia, energy leaders from European international companies, experts in energy and environment issues and representatives of mass-media.
- Academy members participated in drafting the national strategy of scientific research in Romania for the period 2014 - 2020 which defined the priorities and the development of Master Plans such as those for transport, energy and the like.

Serbia

www.ains.rs

- 02.12.2014 – At its annual meeting held in Brussels within the Euro-CASE annual assembly, the Euro CASE Board made a positive decision about the AESS membership of Euro-CASE. Thus the conditions have been met that from January 1, 2015 AESS becomes the 22nd member of the European Council of Academies of Applied Sciences, Technologies and Engineering.

Slovenia

www.ias.si

- The Assembly of the Slovenian Academy of Engineering elected astronaut Sunita Williams as Honorary Member of IAS. On this occasion, 7 new members and 15 full members of the Slovenian Academy of Engineering were also elected. The official speaker of the ceremony was Prof. Dr. Stanka Setnikar Cankar, Slovenian Minister of Education, Science and Sport.
- In accordance with the Annual program, IAS continued with activities on renewing of the innovation process in Slovenia, based on the IAS Statements "Slovenia Needs a New Vision for the Development of the Economy and Society", the annual "Comparative Analysis of Development of Higher Education, Research-development-innovation and Economy Achievements of Slovenia", which IAS performs every year, and recommendations for enforcing the innovation process in the EU that were prepared by the Innovation platform of Euro-CASE, of which IAS is also a member.
- The IAS Statement "Slovenia Needs a New Vision for the Development of the Economy and Society" was distributed to all competent authorities in Slovenia as well as presented to the general public through media (National TV and Radio, Newspapers, Internet media). The statements were translated into the English language and distributed to all Euro-CASE and CAETS member Academies.

- Four workshops were organised by the IAS Committee for Energy and Environment. The aim of the workshops was to prepare IAS Statements on the topic “Energy in Slovenia Today and Tomorrow”. The outcomes of the workshops will be transformed into the IAS Statements for 2015 and will include recommendations on Slovenian Energy policy and recommendations of the Euro-CASE Energy platform.

Spain

www.raing.es

- The Royal Academy of Engineering of Spain has organized more than 30 seminars, conferences and other different events. Due to their relevance, the following should be highlighted: Opening session with the lecture “Photons and neurons: other doors to the perception”; Seminar “Innovation and entrepreneurship: perspectives for a new age”; Seminar “Engineering and high competition. America’s Cup: a case study”; Course “Data engineering”; Round table “Global heating consequences”; Seminar “Supercomputing: a tool for the Engineering of the future”; Workshop “Smart cities, Security, Privacy and Digital Trust”; Seminar “Maritime Engineering: the Spanish harbors’ approach”; Lecture “Displacement structure of matrices: fundamentals and applications”; Lecture “Frontiers of Supercomputing”; Lecture “What has changed in Europe after the European Research Area and times of increased uncertainty?”; Lecture “Water wave mechanics and coastal engineering”; Seminar “Energy, Engineering and Industry”; Annual awards “Academiae Dilecta” (awarded to company with significant relevance in engineering and technology), and “Young Engineers” (awarded to young professional with a special engagement with the Engineering).
- Special mention to the launch of the “Spanish Dictionary of Engineering”, with more than 50,000 terms, developed by the Royal Academy of Engineering of Spain with the participation of more than 150 Engineering and Technology senior experts.

Sweden

www.iva.se

- IVA organised approximately 100 different seminars open to the public. Examples include: Graphene – A Super Material; Lab-On-A-Chip – A paradigm shift in modern bioanalysis; Blue LED, scientific breakthrough with real world impact; Sensing the Future – Biosensors; “Big Data” – Impact on Society; Radiation at our service; Leadership for Radical Innovation; and Science 2.0 – New Boundary conditions for Science.
- Two projects ongoing since 2012 were finalised during the year. Trials for Swedish medicine has been dealing with conditions and infrastructure for clinical trials in Sweden. The project ended by a concluding conference in May and a final report with recommendations, “Growth medicine for clinical studies”, was published. An Energy Efficient Society has analysed the possibilities to bring about a more efficient usage of energy within five sectors of society: buildings, industry, transport, forestry & agriculture and services. The results were presented in the concluding report “50 percent more efficient energy usage by 2050” at a final seminar in June. Both reports are available in electronic format <http://iva.se>.
- IVA organised a Royal Technology Mission to Finland, with His Majesty Carl XVI. The Chairman of IVA, Mr. Leif Johansson, led the delegation. The annual one-week study visit of IVA’s Industrial Research Committee

this year took place in San Francisco and the Bay Area.

- Two 2-week courses on the innovation system in Sweden were organised as a part of the education programme on Comparative Analysis of Innovation in Science and Technology in cooperation with the China Executive Leadership Academy Pudong. IVA also hosted several international guests during the year including delegations from the Vienna Science and Technology Fund Board of Directors, the Technology Academy Finland (TAF), a Slovak academic mission and a business/academic delegation from São Bernardo do Campo (Brazil).

Switzerland

www.satw.ch

- The electric power system in Switzerland is facing various challenges regarding electrical networks, network stability and electricity storage. It is therefore essential to address the question of how the Swiss electrical power system is expected to function in the future when nuclear power plants are no longer available. To this end, SATW published, in collaboration with ETH Zurich, a study analyzing the implications of the Swiss energy strategy 2050.
- SATW remains concerned about the public’s poor understanding of technology and about the fact that an insufficient number of young people is interested in technical and engineering sciences. To get to the bottom of this problem, SATW published the STEM careers barometer and organized a public workshop.
- The cross-linking of computers, smart devices, embedded systems and sensors is increasingly common and widespread. The new cyber reality also includes collection and analysis of big data. The resulting danger of espionage, interference and abuse can no longer be ignored and cyber security is an item of utmost importance. A public debate was held addressing the technical possibilities and limitations of cyber monitoring and defence.
- A trilateral forum was co-organized by the NATF, the RAEng and SATW and took place in Paris. Six input presentations formed the basis for an engaged discussion on the possibilities and pitfalls of European bioeconomy.

United Kingdom

www.raeng.org.uk

- The UK government’s Newton Fund- a £375m 5 year fund is aimed at developing science and innovation partnerships with 15 emerging powers globally. The Academy is one of eight delivery partners charged with bilateral programmes with partners in these countries; it is particularly focusing on research mobility and innovation capacity building.
- The Academy’s Africa Prize for Engineering Innovation aims to stimulate, celebrate and reward innovation and entrepreneurship in Sub-Saharan Africa. In the first year of its operation, 12 engineers from across Africa were shortlisted to receive 6 months training and mentoring to help turn their research into businesses. At a ceremony in 2015, a winner will be chosen to receive a £25,000 prize along with two runners-up who will be awarded £10,000 each.
- The Academy’s Enterprise Hub aims to harness the expertise, networks and insight of Academy Fellows to support the country’s most promising engineering entrepreneurs. This year it added the Launchpad competition aimed at budding entrepreneurs aged 16-25 to its suite of innovation capacity building activities.

Board representatives and Executive Committee



Euro-CASE Board meeting, Brussels, December 2, 2014

Euro-CASE Executive Committee in 2014



Jacques Lukasik [NATF]
Secretary General



Reinhard F. Hüttel [acatech]
Chairman



Sir William A. Wakeham [RAEng]
Treasurer



Björn O. Nilsson [IVA]



Olavi Nevanlinna [TAF]



Jean-Louis Migeot [ARB]



Petr Zuna [EA CR]

Members of the Executive Committee are *ex officio* members of the Board. During 2014, members of the Executive Committee met three times, and held one telephone conference. The Board met once, on December 2 in Brussels, before the Annual Conference. The Finance Committee, composed of Sir William A. Wakeham (Chairman), Jacques Lukasik (NATF), Rolf Hügli (SATW) and Fernando Santana (PAE) met once and held one conference call.

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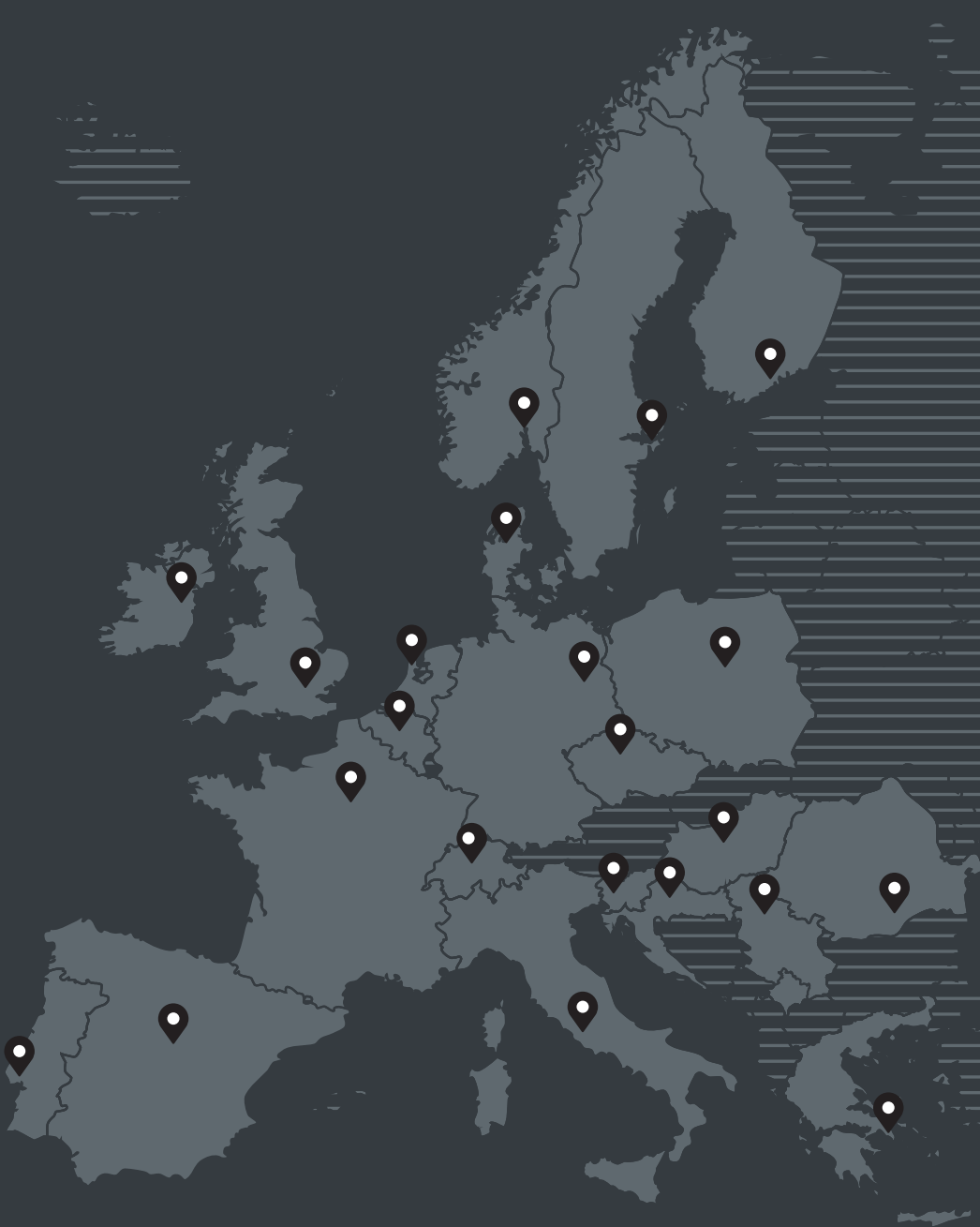
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