



# 2015 ANNUAL REPORT

Netherlands Academy of Technology and Innovation

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# AcTI

# 2015 Annual Report

Netherlands Academy of Technology and Innovation – AcTI  
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DESIGN AND TYPESETTING  
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# Introduction

The Netherlands Academy of Technology and Innovation acts as the *Academy of Engineering* for the Netherlands, a unique and independent platform and network of individuals who are authorities in the fields of social, economic and cultural topics surrounding technology and innovation, as well as in the social and economic application of science and technology.

## Members

The Academy consists of individuals who all – mainly in management positions – work in the fields of science, technology and innovation at large- and small-scale companies, universities and academic institutes. The currently 86-strong membership covers a wide and diverse variety of disciplines, ranging from traditional engineering fields to bio, food, pharmaceutical, ICT and commercial service sectors. Membership is private and by invitation only, while the number of members is being increased to 100. Such membership is only granted to individuals who are active within their working environments. Approximately fifty percent of the members are from the business community. The Academy does not just attract people with research or design backgrounds, but also attracts individuals who have earned their stripes through knowledge-intensive innovation.

## Mission

According to the Academy's vision, science, technology and innovation are essential and interconnected parts of a modern society. The thought processes and actions of the Academy are guided by the major social challenges facing humanity in terms of population growth, food supply, energy supply, the climate, health and raw materials. The Academy considers its mission to be the influencing of social and political opinions and actions related to science, technology and innovation on the basis of this vision.

## Ambitions

The Netherlands Academy of Technology and Innovation aims to use its authoritative and widely-acknowledged position as an *Academy of Engineering* to contribute to a vigorous social debate revolving around science, technology and innovation. A social debate that does justice to the different opinions and interests of social and political communities, as well as to the available scientific and technical knowledge.

The Academy endeavours to improve the research and innovation climate in the Netherlands by acting as an independent sounding board and representing authorities in the field of technology and innovation. Here, the members of the Academy have been able to gain support from the companies and academic institutes that back them, even if the viewpoints of the Academy do not (always) represent the interests of these backers.

## *Cooperation*

So that it can achieve its mission, the Academy maintains relations with relevant organisations in the Netherlands, as well as with European and international networks of Academies of Engineering: Euro-CASE and CAETS (see chapter III-4). These international umbrella organisations give Academy members access to decision-makers in the fields of technical sciences and innovation in all global developed economies.

## *Policy advice at European level*

The European Union has set itself the goal of basing policymaking on factual and scientific knowledge. Through their umbrella organisations, the European Commission has directly involved Europe's scientific, technical and medical academies with the new Scientific Advice Mechanism, SAM. SAM was established in 2015 to supply EU policymaking knowledge in an objective and independent way and to thereby contribute to debates on the benefits and risks surrounding existing and any possible new EU policy.

As a Euro-CASE member, AcTI is one of the two organisations in the Netherlands that participates in the SAM. The KNAW (Royal Netherlands Academy of Arts and Sciences), as a member of ALLEA, EASAC and FEAM, is the second organisation in the Netherlands. The SAM will become operational during the course of 2016, and the KNAW and AcTI will intensify their cooperation to this end.

## *Working method*

From its members, the Academy selects short- or long-term committees or working groups that prepare responses or viewpoints related to current topics. The Academy frequently develops its own visions and/or viewpoints in the field of science, technology and innovation. The Academy gladly discusses these with social and political trendsetters or policymakers.

The Academy primarily conveys its ideas, opinions and viewpoints via its individual members, gratefully taking advantage of the substantial networks that its members collectively have access to.

Once a year, the Academy makes a prominent public appearance when it organises the AcTI Innovation Conference. In 2015, the Innovation Conference set the stage for the single-day international 2015 Euro-CASE Annual Conference.

The Innovation Conference is an annual Academy milestone during which benchmarks are determined, progress is gauged and action is taken in a dynamic way in conjunction with members and invitees. 2015 marked the second time that major social challenges surrounding urbanisation formed the focal point of the Innovation Conference. Chapter 2 contains further information about the Engineering Smart Cities of the Future conference, which was held in the Aula Conference Centre at the Delft University of Technology.

## *Activities*

In this annual report, the board of the Netherlands Academy of Technology and Innovation provides an overview of the activities undertaken by the Academy during 2015. For these activities, we request active input from the members themselves. Academy members are – for the most part – actively involved at companies, universities and research institutes. In addition to this, they also spend part of their limited time on the work undertaken by the Academy:

1. Bimonthly closed plenary meetings, to which policymakers and representatives of NGO's are – when the occasion arises – personally invited to participate in well-prepared discussions.
2. Public annual meetings with a number of select invitees, held in the form of Innovation Conferences since 2003.
3. Acting as sounding boards for policymakers and social organisations.
4. Putting together independent ad hoc committees of private experts upon request to provide recommendations in their own capacity.
5. Ad hoc working groups to prepare discussions and opinions.
6. Collaborating with organisations in the fields of technological and technical scientific research & education and innovative business.
7. Collaborating with the KNAW in providing advice on the technical sciences.

The Netherlands Academy of Technology and Innovation is a financially independent association. It was founded in 1986 and funds its activities by relying on patrons from the business world, academic institutes and government. The financial support provided to the Academy by the aforementioned is considered an acknowledgement by its members and serves to encourage the continuation of its activities.

Bertrand M. van Ee MSc

President of the Netherlands Academy of Technology and Innovation

March 2016

## I General

### *Legal entity*

The Netherlands Academy of Technology and Innovation AcTI is an independent association consisting of 86 private members (as per 31 December 2015). The association itself selects its members from companies, from (technical) scientific research & education institutes and from public & private academic institutes.

### *Objectives*

The Netherlands Academy of Technology and Innovation sets itself the objective of making the connection between science, technology and society easier to understand. The AcTI acts as a meeting point for Dutch knowledge and expertise in the fields of technical scientific research & education, technological development and innovation. Recent and expected developments in the knowledge and innovation system, as well as the economic applications of technology and their social and political implications, are discussed and assessed. As a result of its diverse composition, AcTI is able to form well-considered and independent viewpoints.

On the basis of thus obtained insight, AcTI uses its network of members to contribute to the formation of ideas in the business community, government and academic institutes, which relate to topics such as (technical) scientific research and education policy, technology, quality knowledge infrastructure, a favourable climate for innovative enterprise and research & innovation policy.

On a national and international basis, AcTI promotes interaction between individual members and social and political organisations & factions and government institutions. It also maintains relations with other organisations, including KIVI (Royal Netherlands Institute of Engineers), KNAW (Royal Netherlands Academy of Arts and Sciences), NWO (Netherlands Organisation for Scientific Research), Technologiestichting STW (Technology Foundation STW), Stichting Toekomstbeeld der Techniek (Netherlands Study Centre for Technology Trends), TNO (Netherlands Organisation for Applied Scientific Research), VNO-NCW (Confederation of Netherlands Industry and Employers), VSNU (Association of Universities in the Netherlands), the HBO-Raad (Netherlands Association of Universities of Applied Sciences) the AWTI (Advisory Council for Science, Technology and Innovation) and the Wetenschappelijke Raad voor het Regeringsbeleid (Netherlands Scientific Council for Government Policy).

### *Affiliation with international organisations*

The Netherlands Academy of Technology and Innovation represents the Netherlands as a member of the International Council of Academies of Engineering and Technological Sciences (CAETS). Within a European context, the Academy is the Dutch member of the European Council of Academies of Applied Sciences, Technologies and Engineering (Euro-CASE).

### *Location*

The executive secretariat is based at the Royal Netherlands Academy of Arts and Sciences (KNAW), Kloveniersburgwal 29 in Amsterdam.



## II Structure of the Netherlands Academy of Technology and Innovation

### *General*

Membership of the Netherlands Academy of Technology and Innovation is private and by invitation. Only persons who are able to perform their primary functions for at least 5 years are granted membership. Members must stand down within 5 years of termination of their primary functions.

Approximately fifty percent of members are from the business community, while the remaining members come from universities and other academic institutes and research organisations. The structuring of the AcTI strives towards a balance in representation between business sectors, fields of expertise and technological competences.

The members of the AcTI themselves determine the admittance criteria and decide on whether eligible members are to be granted membership. The board nominates eligible members that have been selected by the New Members Committee.

### *Amendments to membership register*

In 2015, the following amendments to the structure of the association known as the Netherlands Academy of Technology and Innovation have taken place.

#### **Members admitted:**

Eppo (E.E.W.) Bruins PhD, Bas Buchner PhD MSc, Prof Hester Bijl PhD MSc, Ms Lieve Declercq, Benno (B.A.M.) van Dongen MSc, Ms Sjoukje Heimovaara PhD MSc, Menno Holterman MSc, Ms Margrethe Jonkman PhD MSc, Prof Jos (J.T.F.) Keurentjes PhD MSc, Prof Inald (R.L.) Lagendijk PhD MSc, Jos Nelissen MSc, Prof Peter (P.J.) Peters PhD and Ms Prof Corien (J.E.J.) Prins.

#### **Members stood down:**

Ms Prof Louise (L.J.) Gunning-Schepers PhD, Paul (P.P.) 't Hoen MSc, Wim (W.H.M.) Orbons MSc and Gerald (G.J.M.) Schotman MSc.

As per 31 December 2015, membership is 86-strong, including a reserved seat for the President of the Koninklijk Instituut Van Ingenieurs (KIVI) (Royal Netherlands Institute of Engineers), Martin (M.C.J.) van Pernis BSc.

Addendum 4 reflects the structure of the Netherlands Academy of Technology and Innovation as per 31 December 2015. The current membership register can be found on the AcTI website, [www.acti-nl.org](http://www.acti-nl.org).

### *Structure of the board*

The structure of the board as per 31 December 2015: Bertrand (B.M.) van Ee MSc (president), Prof Ed (H.) Brinksma PhD (vice-president), Lucas (L.P.J.J.) Noldus

PhD (vice-president and secretary/treasurer) and Prof C.J.N. Cees (C.J.N.) Buisman PhD (vice-president).

Lucas Noldus also holds the position of adviser to the board for international relations (foreign secretary). In this capacity, he represents the AcTI in the Council and on the Board of Directors of CAETS.

### *Former members reunited as VOLAcTI*

In 2011, former members took the initiative of convening biannual meetings of former AcTI members under the name of VOLAcTI, Assembly of Former AcTI Members. In 2015, membership of VOLAcTI numbered 48 members. These members convened on 15 April and 2 November. Former members are granted access to the Public Annual Meeting and/or the Innovation Conferences.

## III 2015 Annual Programme

### 1. Euro-CASE Annual Conference – 2015 AcTI Innovation Conference



#### Introduction

In 2015, AcTI hosted the annual conference of Euro-CASE, short for European Council of Academies of Applied Sciences, Technologies and Engineering. On this occasion, the AcTI merged its annual innovation conference with the Euro-CASE Annual Conference. This expanded the Innovation Conference, making it a high-level single-day European conference inspired by the major social challenges encountered by cities as they develop.

This twelfth Innovation Conference and Euro-CASE Annual Conference had the motto of *Engineering Smart Cities of the Future*. The conference was held on Monday 2 November 2015 in the Aula Conference Centre at the Delft University of Technology in Delft. It was very well attended by 397 registered participants.

The innovation conferences focus on national policymakers, government and NGO policymakers and those responsible for innovation in business and academic institutes (research and education). On this occasion, target groups were expanded to include management and representatives from the European Academies of Engineering, European political and government institutes and other non-governmental stakeholders that operate at pan-European level.

### Theme: Engineering smart cities of the future

The 2015 Innovation Conference focused on the effect of technology and innovation on the further development of smart cities. On how such technology and innovation can help us make our future cities healthier, safer, more mobile and more social in a sustainable way, while still preserving privacy. During its 2014 innovation conference, AcTI highlighted the urgent need for innovation and entrepreneurship in order to address increasing urbanisation in a dynamic, healthy and sustainable way. The European dimension of this theme was on the bill at the 2015 conference: *Engineering Smart Cities of the future*.

This theme was drawn up in conjunction with the Euro-CASE affiliates, Europe's *Knowledge and Innovation Communities* Climate-KIC, EIT Digital, InnoEnergy, EIT Health from the *European Institute of Innovation and Technology (EIT)* and Wageningen University.

In his welcoming address, Euro-CASE president Reinhard Hüttel pointed out the fact that cities are the key to Europe's future, and that the European Union would have to respond more effectively to the sustainable transformation of urban areas throughout Europe. According to the view of the European Commission, the economic, social and physical transformation of cities will contribute to the Europe 2020 strategy for smart, sustainable and inclusive growth. This is one of the central topics on the Urban Agenda compiled by the European Commission.

The conference allowed AcTI to prelude the Dutch presidency of the European Union during the first half of 2016. The Urban Agenda forms one of the priorities of this Dutch presidency. We were therefore thrilled that Minister for Housing and the Central Government Sector, Stef Blok, took the opportunity to present the opening speech as the driving force behind the Urban Agenda.



Minister Stef Blok (r) with AcTI president Bertrand van Ee

In his personal and appealing speech, Minister Stef Blok related the historic development of cities to his future-based policy, referring to flexible policy and room for cooperation between the public sector, the academic world and entrepreneurship. Many aspects of production processes, infrastructure, transport and energy will, in one way or another, become 'smart' in the future. Cities will not just play an ever more important role as political entities, but also as centres of creativity, knowledge and learning.

### Programme

The theme, Engineering Smart Cities of the Future, was compiled to include three points of interest, put forward by Prof Mick Eekhout PhD MSc:

1. How to create broad future outlooks on smart cities: the transformation of preconditions for public administration and regulation, as well as for the stimulation and support of creativity, entrepreneurship and local initiatives.
2. How to approach engineering challenges in the field of sustainable transport and logistics, energy, water & waste water systems, food production, health and welfare.
3. How to link the liveability, attractiveness and human balance of cities to engineering challenges.

### First plenary session

During the first plenary session, the first two points of interest were highlighted by:

- *Prof Klaus Beckmann*, President of the Academy for Spatial Research and Planning, Germany,
- *Prof Wan Biyu*, Chief Scientist, National Smart City Joint Lab, China,
- *Prof Maarten Steinbuch*, professor of Control Systems Technology, Eindhoven University of Technology,
- *Reinier de Graaf*, partner of Rem Koolhaas at OMA and director of Research Studio AMO,
- *Prof Arjan van Timmeren*, scientific director of AMS, the Amsterdam Institute for Advanced Metropolitan Solutions, and professor of Environmental



Reinier de Graaf



- Technology & Design, Architecture faculty at Delft University of Technology,
- *Prof Qing Li*, Department of Automation Tsinghua University Beijing.

Prof Qing Li's presence was made possible by the Chinese Academy of Engineering. This is a result of the Memorandum of Understanding that the ActI concluded with the Chinese Academy of Engineering in 2014.

### Innovation Fair

The Innovation Fair was held during and between the parallel sessions in the main area of the Aula Conference Centre. Here, it was possible to view 22 demonstration exhibits that showcased exciting new products and projects. A separate platform gave young researchers and entrepreneurs the opportunity to pitch their projects and plans. Please see addendums 3C and D for an overview of these demonstrations and pitches.



Prof Qing Li

### Parallel sessions

Throughout 5 parallel sessions, EIT Digital, Climate-KIC, EIT Health, InnoEnergy and Wageningen University gave sixteen presentations on the themes of climate, energy, ICT, nutrition and health. Results achieved, showcase projects and the background of the KIC approach were put forward during these presentations. Please see addendum 3B for an overview of the speakers involved.



### Closing plenary session

To conclude the parallel sessions, the three CEO's of the KIC's, Bertrand van Ee MSc (Climate-KIC), Prof Willem Jonker PhD (EIT Digital) and Diego Pavia PhD (InnoEnergy) formed a panel – moderated by Michiel Bicker Caarten – to discuss ways in which the EIT can contribute to European knowledge infrastructure in order to make cities smarter.



The third point of interest, with its theme of linking the liveability, attractiveness and human balance of cities to relevant engineering challenges, was highlighted from a range of angles by:

- Rogier van der Heide – hief Design and Marketing ZumTobel Lighting
- Liesbeth van der Pol – architect and former Rijksbouwmeester (Chief State Architect)
- Alexey Ershov PhD – Vice President, Smarter Cities Europe, IBM Corporation.

### Follow-up

Both AcTI and Euro-CASE actively contribute to evidence-based advice, using the European Commission's Scientific Advice Mechanism (see III.4). Further to the conference, AcTI has offered its services to Minister Stef Blok to act as a sounding board during development of the Urban Agenda.

Through Euro-CASE and by using – amongst others – the Euro-CASE Innovation Platform, AcTI will make a more active contribution towards creating a better research climate for the applied sciences in response to the major social challenges faced.

### Innovation Conference, objective and execution

The annual innovation conferences, which the Netherlands Academy of Technology and Innovation has organised as part of its public annual meetings since 2003, are action-based and aim to commit companies, academic institutes and government to boosting innovation capacity.

AcTI constantly maintains a critical outlook on the innovation ecosystem in the Netherlands and on the many parties that play a role in it. It strives towards encouraging innovation. This can be done by noting problem areas and working towards eliminating such problem areas wherever possible. By improving awareness about innovation. By providing inspiration. And the annual Innovation Conference makes all the aforementioned possible.

During preceding innovation conferences, the academy has focused on initiatives for e.g. stimulating entrepreneurship, promoting cooperation between companies, academic institutes and government, promoting the on-shoring of R&D activities and focusing attention on preferred innovations in the field of sustainable energy. Since 2011, the Innovation Conferences have placed constant emphasis on the fact that demand – major social challenges in this case – must define innovation policy.

These Innovation Conferences are entirely financed by sponsors. For a list of sponsors, please see addendum 1.

To ensure the success of this 2015 conference, the board appointed a 2015 planning committee consisting of AcTI members Kees de Koning MSc, Rob Fastenau PhD, Prof Mick Eekhout PhD and Jorrit Kuipers MSc.

H.P. Dits PhD and Ms A. Henderson from AcTI acted as the executive secretariat/project management team. Conference management was handled by Jan Douwe Rekers (Events in Business), supported by Event Solutions from the Delft University of Technology, with Ms Kitty Leering (Dutchblend) responsible for coordination of the speakers. Michiel Bicker Caarten acted as chairman and moderator.

### *2. Government policy in the field of innovation, technology and exchange of knowledge*

The general meetings focused attention on the Dutch Science Agenda, Alexander Rinnooy Kan and Dirk Jan van den Berg from the steering committee updated AcTI members on the process and the results achieved.

The Delft University of Technology, Eindhoven University of Technology, University of Twente, Wageningen University & Research Centre, STW and TNO released a report named *Agenda for the Netherlands – Inspired by Technology* as a contribution to the Dutch Science Agenda. Based on ten technological themes, the report describes the link between global social challenges, economic strengths and business opportunities, academic strengths and necessary modernisation



tasks. Two of these themes, *Integral Water Management* and *Smart Industry*, were discussed during the 2015 general meetings.

Throughout two sessions, the role and position of SME's in primary sector policy was closely examined and discussed with representatives from the HTSM (High Tech Systems and Materials) and Water primary sectors.

### *3. Collaboration with the Royal Netherlands Academy of Arts and Sciences KNAW*

The President of the KNAW, Prof Ms José van Dijck PhD, addressed AcTI and Euro-CASE delegates at the Conference Dinner held on 3 November 2015. As part of her speech, she introduced the Dutch National Research Agenda. She also discussed the Science Advice Mechanism, in which KNAW aims to participate in close collaboration with Euro-CASE and the AcTI (see point 4 below).

Other KNAW activities:

AcTI members Prof Ms Corien Prins PhD and Prof Luc Soete PhD also serve as members of the Social Sciences Advisory Council of the KNAW.

### *4. International networks*

As the Academy of Engineering of the Netherlands, the Netherlands Academy of Technology and Innovation maintains international relations with other Academies of Engineering. Within a European context, this is facilitated by the *European Council of Academies of Applied Sciences, Technologies and Engineering (Euro-CASE)*. Internationally, it is facilitated by the *Council of Academies of Engineering and Technological Sciences (CAETS)*.

#### **Euro-CASE**

The Netherlands Academy of Technology and Innovation is the Dutch member of the European Council of Academies of Applied Sciences, Technologies and Engineering (Euro-CASE). Euro-CASE is chaired by Prof Reinhard Hüttel, who is also president of the German academy of Engineering *acatech*. In 2015, the AcTI was represented on this European association of academies of engineering by its president Bertrand van Ee and secretary-general Henk Dits.

#### **2015 Euro-CASE Annual Conference, Board Meeting**

See section III point 1 for the 2015 Annual Conference. The Euro-CASE Board Meeting was organised by AcTI and held in the main hall of the KIVI (Royal Netherlands Society of Engineers) in The Hague on 3 November 2015. The AcTI was represented by Bertrand van Ee and Henk Dits.

## Activities in the context of Euro-CASE

AcTI is actively involved in the following activities:

- SAM

The European Union has set itself the goal of basing policymaking on factual and scientific knowledge. Through their umbrella organisations and Academia Europaea ([www.ad-info.org](http://www.ad-info.org)), the European Commission has directly involved Europe's scientific, technical and medical academies with the new Scientific Advice Mechanism, SAM. SAM was established in 2015 to supply EU policymaking knowledge in an objective and independent way and to thereby contribute to debates on the benefits and risks surrounding existing and any possible new EU policy.

As a Euro-CASE member, the AcTI is one of the two organisations in the Netherlands that participates in the SAM. The KNAW, as a member of ALLEA, EASAC and FEAM, is the second organisation in the Netherlands. The SAM will become operational during the course of 2016, and the KNAW and AcTI will intensify their cooperation to this end.

- Euro-CASE Innovation Platform

Innovation is more important than ever when it comes to securing EU economic growth and paving the way for sustainable European development. With Horizon 2020 and the Innovation Union as flagships of the Europe 2020 growth strategy, innovation remains high on the political agenda. Independent, science-based and evidence-based policy advice on innovation therefore retains its place on the agenda of Euro-CASE. For this reason, Euro-CASE made the decision in 2015 to re-institute the Innovation Platform for a further 2 years. Bertrand van Ee and Kees de Koning have been admitted to the Innovation Platform. On behalf of the AcTI, Bertrand van Ee has assumed the presidency of this Innovation Platform from Björn Nilsson, president of the Swedish Academy of Engineering (IVA).

## CAETS

The Netherlands Academy of Technology and Innovation serves as the Dutch member of the International Council of Academies of Engineering and Technological Sciences (CAETS), the deliberative body for the presidents of 26 global Academies of Engineering. The AcTI provides experts for the benefit of international study groups and conferences upon request, and participates in activities organised under the auspices of CAETS.

The 2015 annual CAETS conference was held from 1-4 June in Delhi, India. This conference was arranged by the Indian National Academy of Engineering (INAE). AcTI was represented here by Lucas Noldus in his capacity as vice-president of the AcTI and director of CAETS.

The conference consisted of three sub-meetings:

- CAETS Board of Directors Meeting, 12 October
- CAETS Convocation: "Pathways to Sustainability: Energy, Mobility and Healthcare Engineering", 13-14 October, with excursions on 16 October
- CAETS Council Meeting as part of this international forum for academies of engineering.

### Convocation: “Pathways to Sustainability: Energy, Mobility and Healthcare Engineering”

As part of the Convocation, Lucas Noldus gave a presentation on “Smart Mobility: Driver state estimation and advanced driver-vehicle interfaces”.

The convocation provided a platform for young engineers from around the world, who were nominated by the CAETS member academies and invited by the Indian Academy. AcTI-nominated invitees from the Netherlands were:

- Weishan Chen (Wageningen University): Mixed culture chain elongation: A novel biotechnology for biochemical production from biomass residual streams.
- Pavan Dadlani (Philips Research): Supporting the diagnosis of childhood pneumonia in low-resource settings.
- Augusta Goedhart (Allego): Charging Plaza: A futureproof charging solution.

### CAETS Council Meeting

As part of the Council Meeting, Lucas Noldus gave a presentation on “Nano-Photonics in The Netherlands” within the context of the “Year of Light” of the United Nations.

### Activities in the context of the Memorandum of Understanding concluded with the Chinese Academy of Engineering

The Chinese Academy of Engineering requested assistance in launching a new global journal named *Engineering*. This journal publishes important results and breakthroughs in the field of engineering science and technology. The first edition was released in March 2015. It contained a contribution by Prof Ton van der Steen PhD MSc, with commentary by AcTI president Bertrand van Ee.

## 5. Other activities

### NWO (Netherlands Organisation for Scientific Research) Spinoza Prize 2015

Upon request of the NWO and for the twentieth time, the president of the Netherlands Academy of Technology and Innovation submitted a list of nominations for the Spinoza Prize.

### 2015 meetings

The board convened eight times. Apart from the Innovation Conference/Euro-CASE Annual Conference held on 3 November in Delft, the members held five plenary meetings at various locations throughout the Netherlands.

In terms of the general meetings, it is important to mention that an agenda committee was established in 2015. From September 2015, this committee has initiated a theme-based approach to the agendas of the general meetings. Additions to the agenda included the 10 technological themes of the *Agenda for the Netherlands – Inspired by Technology* and contributions by the three technical universities, Wageningen University, TNO and STW to the Dutch Science

Agenda (see section III point 2).

- 16 February, KNAW, Amsterdam, primary sector policy theme: HTSM sector and role of SME's
- 21 April, KIVI, The Hague, NWO strategy 2015-2018
- 24 June, WETSUS, Leeuwarden, primary sector policy theme: Water sector and role of SME's
- 3 September, Deltares, Delft, *Integral Water Management* theme
- 7 December 2015, MAPPER Lithography, Delft, *Dutch Industry, Smart(est) Industry* theme

## 6. Executive secretariat

The secretariat of the Netherlands Academy of Technology and Innovation is based in the Trippenhuis, home of the Royal Netherlands Academy of Arts and Sciences KNAW.

Part-time staff members were Henk Dits PhD, secretary-general (3.5 days a week) and Ms Anouk Henderson-de Vlieger, secretarial co-worker (1.5 days a week).

## Addendum 1

### 2015 patrons and sponsors

The Association Netherlands Academy of Technology and Innovation had the support of the following patrons over the 2015 financial year:

Alliander, ASML Netherlands, Bronkhorst High Tech, CBS, Climate-KIC, Danone, Delft University of Technology, Deltares, Demcon, DSM, Benno van Dongen, Eindhoven University of Technology, FrieslandCampina, Leiden University, Life Sciences Partners, Maastricht University, ML-Consulting, NEN, NLR, Noldus Information Technology, NTS Group, Océ Holding, Paques BV, Philips Research, Radboud University Nijmegen, Shell Netherlands, Unilever, University of Twente, Wageningen University and Research Centre, Wetsus.

*The 2015 Innovation Conference & Euro-CASE Annual Conference was a financial success thanks to the following sponsors:*

The EIT KIC's: Climate-KIC, EIT Digital and InnoEnergy, Bronkhorst High-Tech, Delft University of Technology, Demcon, DSM Innovation Centre, Life Sciences Partners, Medical Delta, Ministry of Economic Affairs, NEN, Noldus Information Technology, NWO, Océ Holding, Roland Berger, STW, Unilever, University of Twente, Wageningen University and Research Centre.

## Addendum 2

### Structure of 2015 working groups and committees

#### *1. 2015 Innovation Conference working group*

D.J. van den Berg PhD, Prof A.C.J.M. Eekhout PhD MSc, R.H.J. Fastenau PhD MSc, C.A.M. de Koning MSc (chair), J. Kuipers MSc

#### *2. China working group*

L.P.J.J. Noldus PhD (chair), Prof Ms M.P.C. Weijnen PhD MSc.

#### *3. Auditing committee*

Members of the auditing committee for the 2015 financial year were P.J.J.G Nabuurs MSc and W. Jouwsma PhD MSc.

#### *4. New Members Committee*

Seats on the permanent New Members Committee were held by members Prof Ms M.P.C. Weijnen PhD MSc (chair), W. Jouwsma PhD MSc, R.W. van Leen PhD, Prof Marc van Loosdrecht PhD MSc, Prof E.M. Meijer PhD (from September) and Mr J.F. Sistermans (until September).

#### *5. Agenda Committee*

Prof C.J.N. Buisman PhD MSc (chair), R.H.J. Fastenau PhD MSc, Ms C. Hilhorst PhD, B.J. Kampherbeek MSc.

## Addendum 3

# Programme of 2015 Euro-CASE Annual Conference – AcTI Innovation Conference

### *Engineering smart cities of the future*

2 November 2015, Aula Conference Centre, Delft University of Technology

#### **A. Keynote speeches and schedule**

##### **10:00 Welcome and Opening Speeches**

- Moderator and chairman: Michiel Bicker Caarten
- Bertrand van Ee - President of the Netherlands Academy of Technology and Innovation and CEO of Climate-KIC
- Reinhart Hüttl, Chairman of Euro-CASE and President of acatech, presented by Jacques Lukasik, Secretary-general of Euro-CASE
- Stef Blok – Minister for Housing and the Central Government Sector, Cabinet of the Netherlands
- Mick Eekhout, Conference Committee, Programme Outline

##### **10:30 Keynote speeches**

- Prof Maarten Steinbuch PhD – Professor of Control Systems Technology at the Faculty of Mechanical Engineering, Eindhoven University of Technology
- Prof Arjen van Timmeren – Professor of Environmental Technology & Design at the faculty of Architecture at the Delft University of Technology
- Prof Wan Biyu PhD – Vice-Chairman of ISO Smart Communities Metrics and Chief Scientist at the National Smart City Joint Lab, China

##### **11:30 Interval – Innovation Fair**

##### **12:00 Keynote speeches**

- Reinier de Graaf – Director of Research Studio AMO and OMA partner
- Prof Klaus Beckmann PhD – President of the Academy for Spatial Research and Planning, Germany
- Prof Li Qing PhD – Department of Automation, Tsinghua University, China

##### **13:00 Lunch interval – Innovation Fair and Pitches**

##### **14:00 Parallel Sessions (see topics and list of speakers below)**

##### **15:30 Interval - Innovation Fair and Pitches**

##### **16:00 Final plenary session and closing**

#### **‘Making European cities smarter’ panel discussion**

- Bertrand van Ee – CEO of Climate-KIC
- Prof Willem Jonker PhD – CEO of EIT Digital
- Diego Pavia – CEO of InnoEnergy

#### **Keynote speeches**

- Rogier van der Heide – Chief Design and Marketing at ZumTobel Lighting
- Liesbeth van der Pol – Architect, former Chief State Architect (Rijksbouwmeester)
- Alexey Ershov PhD – Vice President, Smarter Cities Europe, IBM Corporation

#### **Closing**

- Reinhard Hüttel, Chairman of Euro-CASE and President of acatech

#### **17:15 Innovation Fair and refreshments**

### **B. Parallel sessions and speakers**

#### **1. CLIMATE hosted by Climate-KIC**

‘How to build a zero carbon economy and a climate resilient society’

- Chris Mooiweer, Director of Climate-KIC Netherlands, moderator
- Tillmann Klein (Delft University of Technology), 2nd Skin
- Sybren Steensma (Delft University of Technology), Building Technologies Accelerator (BTA)
- Patricia Chaput (Institute for Sustainability, London) Sustainable City Systems (SCS)

#### **2. ENERGY hosted by InnoEnergy Benelux**

‘Impact with sustainable energy innovation?’ Organise it the KIC InnoEnergy way.’

- Klaas Schuring, CEO of InnoEnergy Benelux
- André Haverkort, Project Manager at InnoEnergy Benelux

#### **3. ICT hosted by EIT Digital, The Netherlands**

- Patrick Essers, Director of EIT Digital, the Netherlands
- George Huitema (TNO), Hybrid Energy Grid Optimisation (HEGRID)
- Eric Pauwels (CWI), Computational Optimisation for Smart Energy Systems
- Ruben Rajagopalan (Philips), Intelligent outdoor lighting
- Gilles Betis, Action Line Leader of EIT Digital’s Urban Life and Mobility

#### **4. FOOD hosted by Wageningen University and Research Centre**

- Dirk M. Wascher, Senior Researcher for Metropolitan Landscapes & Food, ‘Food Planning Strategies for Metropolitan Spaces – A Spatial Approach’
- Peter Smeets PhD, DLO Researcher, Alterra Wageningen University
- Jan Westra, Strategic Business developer at Priva, ‘To be known as the leading technology and service provider for sustainable urban deltas: circular economies based on greentech and smart buildings.’



- Frans Kampers PhD MSc, Innovative Technologies Coordinator, 'How technology will help to feed smart citizens'

## 5. HEALTH hosted by EIT Health

- Menno Kok PhD, Director of Medical Delta, Interim Director of EIT Health Belgium & the Netherlands, 'Redoing Healthcare in 7 Years'
- Erwin C. Heeneman MSc, Public Engagement Manager, Achmea, 'The wheel of engagement'
- Jolanda Lindenberg PhD, Leyden Academy of Vitality and Ageing, 'Education in EIT Health: shifting perspectives.'
- Prof Wiro J. Niessen PhD, Erasmus University Medical Centre, Delft University of Technology, Medical Delta, 'MR imaging biomarkers for dementia diagnosis and prognosis'

## C. Pitches at the Innovation Fair

- AMIBM, Aachen Maastricht Institute for Biobased Materials, Biobased Materials, Richard Ramakers
- CleVR BV, Virtual Reality Software – Hardware – Training – Support, Yme Canter Visscher
- Comon-Invent, eNose, Simon Bootsma
- Dobots BV, Crownstone: the smart power outlet, Anne van Rossum
- Erasmus MC, Heartbeat OCT, Tianshi Wang
- Green ID Europe, Transition Grid, Jonathan Ramirez
- Indymo, Underwater drone for Water Quality and Ecology, Rutger de Graaf
- MgAubel, Marc Goedkoop
- NEN, How Standards help Cities get smart, Jeannette Hofman-Zuter
- NIOO, semi-automated nature monitoring, Kamiel Spoelstra
- Noldus, DriveLab and Face Reader, Bram van Mil
- RGS Development B.V., Energy materials for the future, Maarten den Heijer
- Streamlines Design, Tulip turbine, Eric Terry
- Tint BV, Kweecker, Luke van Adrichem
- Delft University of Technology, Academic knowledge on solar energy available for everyone, Arno Smets
- Delft University of Technology, Data-centred Design, Jorrit Kuipers
- Delft University of Technology, VIDL: symbiotic driving, David Abbink
- Utrecht University, Crowd simulation, Roland Geraerts
- WaterHubs, Water and sanitary infrastructure for slums, Saurabh Saraf

## D. Innovation Fair, participants

- Green Dino, a manufacturer of virtual labs and fully-automated simulators, demonstrated its newest innovation: 3D E-learning. [www.greendino.nl](http://www.greendino.nl)
- INDYMO, uses state-of-the-art technologies (underwater drones, sensors) to monitor water quality and ecology in an innovative and dynamic way. [www.indymo.nl](http://www.indymo.nl)
- AMIBM (Aachen Maastricht Institute for Biobased Materials), at Brightlands Chemelot Campus in Sittard-Geleen, is a cross border research institute with

members from Maastricht University, RWTH University and Fraunhofer IME. [www.amibm.org](http://www.amibm.org)

- MgAubel is an advanced materials start-up company developing a next generation concrete substitute with fast-curing, durable and eco-friendly properties. [www.mgaubel.com](http://www.mgaubel.com)
- CleVR, experts in creating complete and customised Virtual Reality solutions. [www.clevr.net](http://www.clevr.net)
- Kweecker, [www.kweecker.nl](http://www.kweecker.nl)
- NEN, the Netherlands, renowned knowledge network for standardisation and implementation of standards at national and international level.
- Comon-Invent, a business-to-business service provider offering all services necessary for operating and maintaining wireless electronic nose (eNose) networks for the continuous monitoring of changes to ambient air and malodours in the environment. [www.comon-invent.com](http://www.comon-invent.com)
- Streamlines Design, experts in fluid dynamics and product design. [www.streamlinesdesign.nl](http://www.streamlinesdesign.nl)
- Transition GrID, [www.transitiongrid.com](http://www.transitiongrid.com)
- Sense Labs
- Crownstone, <http://crownstone.rocks>
- 3D-printed External Light Trapping for Solar Cells - Utrecht University,
- VIDi: Symbiotic Driving, developing a feel for symbiotic driving - Establishing haptic shared control as adaptive, individualised interaction between driver and highly-automated car. [www.delfthapticslab.nl/programme/vidi-research/](http://www.delfthapticslab.nl/programme/vidi-research/)
- Crowd simulation, Utrecht University
- Noldus, [www.noldus.com](http://www.noldus.com)
- WaterHubs, [www.waterhubs.org](http://www.waterhubs.org)
- Heartbeat OCT, Erasmus MC
- RGS Development

## Addendum 4

### Membership register as per 31 December 2015

#### *Bestuur*

**Ir. B.M. van Ee**, *voorzitter*

CEO Climate-KIC

**Dr. L.P.J.J. Noldus**, *vicevoorzitter, secretaris-penningmeester*

Algemeen directeur Noldus Information Technology BV

**Prof.dr. H. Brinksma**, *vicevoorzitter*

Rector Magnificus Universiteit Twente

**Prof. dr. ir. C.J.N. Buisman**, *vicevoorzitter vanaf*

Wetenschappelijk directeur WETSUS

#### *Leden*

**rof. dr. P.M.G. Apers**, Decaan Faculteit EWI Universiteit Twente

**Ir. G.F.M. Beenker**, Member of the Innovation Strategy and Partnerships team  
Universiteit Eindhoven

**Drs. H.W. te Beest**, Vicevoorzitter College van Bestuur Universiteit Leiden

**Drs. D.J. van den Berg**, Voorzitter Raad van Bestuur Sanquin Bloedvoorziening

**Prof. dr. G.M.A. van Beynum**, Directeur (DGA) Mis Amigos Ventures BV

**Prof. dr. R.J. Bino**, Algemeen Directeur Agrotechnology & Food Sciences Group  
Wageningen UR

**Prof.dr. ing. D.H.A. Blank**, Wetenschappelijk directeur MESA+ Institute for  
Nanotechnology Universiteit Twente

**Prof. dr. C.A. van Blitterswijk**, Hoogleraar en Chair afdeling Tissue Regeneration  
Universiteit Twente

**Ir. H. Borggreve**, Executive Vice President ASML/Cymer Technologies ASML

**Dr. E.E.W. Bruins**, Lid Tweede Kamer der Staten-generaal

**Dr.ir. B. Buchner**, President MARIN

**Prof. dr. ir. H.Bijl**, Decaan Faculteit Luchtvaart en Ruimtvaarttechniek TU Delft

**Dr. H. Cappon**, VP R&D Nutricia Medical Nutrition Danone Nutricia Research

**Dr. K.H. Chang**, Vml. algemeen directeur Koninklijke Nederlandse Akademie van  
Wetenschappen

**Prof. dr. H.J.H.M. Claassen**, CEO ViroNovative B.V.

**Dr. P.H. Daverveldt**, Algemeen Directeur NEN

**Mevr. L.C.A. Declercq**, Voorzitter Directie Vitens

**Prof. dr. R.H. Dijkgraaf**, Director Institute for Advanced Study Princeton USA

**Drs. F. Dom**, CEO HiFiBiO SAS Parijs

**Ir. B.A.M. van Dongen**, Senior Partner Roland Berger

**Prof. dr. ir. A.C.J.M. Eekhout**, Directeur Octatube International B.V.

**Prof. dr. J.C.M. van Eijndhoven**, Consultant Global Knowledge Strategies & Partnership

**Prof. dr. J.J. Engelen**, Voorzitter NWO

**Dr. ir. R.H.J. Fastenau**, Decaan Faculteit EWI Technische Universiteit Delft

**Prof. dr. B.L. Feringa**, J.H. van 't Hoff Distinguished Professor of Molecular Sciences  
Rijksuniversiteit Groningen

**Prof. Em. Dr. W.M.J. van Gelder**, Vml. Senior Vice President Danone

**Dr. H.A. Harwig**, Technische Universiteit Eindhoven

**Mevr. dr. ir. S. Heimovaara**, Directeur Research Royal van Zanten

**Ir. M.H. Hendrikse**, CEO & Chairman Brainport Industries NTS-Group

**Mevr. C. Hilhorst**, Vice-President R&D, Foods Europe Unilever

**Ir. M. Holterman**, CEO Nijhuis Water Technology

**Dr. H. van Houten**, Executive Vice President & General Manager Philips Research

**Dr. Ir. M. Jonkman**, Corporate Director R&D FrieslandCampina

**Dr. ir. J.G.H. Joosten**, Voorzitter Bestuur Dutch Polymer Institute

**Dr. ir. W. Jouwsma**, Commissaris Bronkhorst High-Tech B.V.

**Dr. A.C. Juriaanse**, General Manager NIZO food research B.V.  
**Ir. B.J. Kampherbeek**, CEO MAPPER Lithography  
**Prof. dr. ir. J. Keurentjes**, Lid Raad van Bestuur TNO  
**Ir. C.A.M. de Koning**, Directeur Consualis Consulting Group BV  
**Prof. dr. ir. L.P. Kouwenhoven**, Universiteitshoogleraar / Group Leader Quantum Transport Group Technische Universiteit Delft  
**Prof. dr. M.J. Kropff**, Vicevoorzitter en Rector Magnificus Wageningen Universiteit  
**Dr. R.R. Kuijten**, General Partner/co-owner Life Sciences Partners  
**Ir. J. Kuipers**, Directeur Green Dino bv  
**Dr. N.C.M. Laane**, Director NWO  
**Prof. dr. ir. R. Lagendijk**, Full professor Multimedia Signal Processing Delft University of Technology  
**Dr. R.W. van Leen**, Chief Innovation Officer DSM Innovation Center  
**Prof. dr. dr. h.c. ir. M.C.M. van Loosdrecht**, Hoogleraar Milieubiotechnologie Technische Universiteit Delft  
**Ing. A.H. Lundqvist**, Boegbeeld Topsector High Tech Systemen & Materialen  
**Ir. R.M.J. van der Meer**, Vml raad van bestuur Akzo Nobel  
**Prof. dr. E.M. Meijer**, Technische Universiteit Eindhoven  
**Prof. dr. G.J.M. Meijer**, Voorzitter College van Bestuur Radboud Universiteit Nijmegen  
**Ir. J.H.J. Mengelers**, Voorzitter College van Bestuur Technische Universiteit Eindhoven  
**Mw. M. Mol-Arts MD**, Directeur Pivot Park Oss  
**Ir. P.C. Molengraaf MBA**, Voorzitter Raad van Bestuur Alliander  
**Ir. P.J.J.G. Nabuurs**, Directeur IIW  
**De heer J. Nelissen**, Algemeen directeur Newtricious  
**Prof. dr. ir. G. van Oortmerssen**, Zelfstandig adviseur VOC Van Oortmerssen Consultancy  
**Dr. N. Overbeeke**, Zelfstandig Adviseur  
**Dr. J. Pâques**, Directeur Externe Betrekkingen Paques BV  
**Prof. dr. M. Paul**, Voorzitter College van Bestuur Universiteit Maastricht  
**Ing. M.C. van Pernis**, President Koninklijk Instituut Van Ingenieurs KIVI  
**Ir. M.A.G. Peters**, Algemeen Directeur Nationaal Lucht- en Ruimtevaartlaboratorium NLR  
**Prof. dr. P.J. Peters**, Hoogleraar Nanobiologie, Universiteit Maastricht  
**Prof. dr. S. Poppema**, Voorzitter College van Bestuur Rijksuniversiteit Groningen  
**Prof. mr. J.E.J. Prins**, Hoogleraar Recht en Informatisering Universiteit van Tilburg  
**Prof. dr. A.H.G. Rinnooy Kan**, Hoogleraar Economie en Bedrijfskunde Universiteit van Amsterdam  
**Prof. dr. R.A. van Santen**, Akademiehogleraar en Hoogleraar Katalyse Technische Universiteit Eindhoven  
**Ir. A.H. Schaaf**, President & CEO Océ Holding B.V.  
**Dr. H.G.C.P. Schikan**, Commissaris Prosensa  
**Dr. ir. D.A. Schipper**, Managing Director Demcon Holding  
**De heer J.F. Sistermans**, Vml. gedelegeerd bestuurder Brainport en voorzitter AWTI  
**Dr. Th.J.H. Smit**, VP Exploration Technology and Chief Scientist Geophysics Shell Research  
**Ir. M. Smits**, Algemeen Directeur Deltares  
**Prof. dr. L.L.G. Soete**, Rector Magnificus Maastricht University  
**Prof. dr. ir. A.F.W. van der Steen**, Hoofd Biomedical Engineering Erasmus MC  
**Prof. Em. dr. H.A.J. Struiker Boudier**, Farmacologie, Universiteit Maastricht  
**Drs. B. Tax**, Managing Director Rijk Zwaan Nederland BV  
**Dr. T.B.P.M. Tjin-A-Tsoi**, Directeur-Generaal Centraal Bureau voor de Statistiek  
**Prof. dr. ir. B.M. Weckhuysen**, Faculteitshoogleraar Faculteit Betawetenschappen Universiteit van Utrecht  
**Prof. dr. ir. M.P.C. Weijnen**, Hoogleraar Proces- en Energienetwerken Technische Universiteit Delft  
**Prof. Em. dr. J.H.W. de Wit**, Corrosietechnologie, Technische Universiteit Delft  
**Ir. J. Zuidam**, Vml. Raad van bestuur DSM

