Executive Committee Meeting Agenda

Thursday, 30 August 2018
3 pm Spain & Sweden; 10 am Uruguay; 8 am Texas
Dial-in information will be provided

EXCOM Members

Acad. Eng. Lucio Cáceres (President)
Dr. Elías Fereres (Past-President)
Dr. Tuula Teeri (President-Elect)
Dr. Ruth David (Secretary/Treasurer)

1. Welcome and approval of agenda
2. Approval of EXCOM Minutes of 12 April 2018
3. Report of the Secretary/Treasurer
    a. 2018 Dues Status
    b. Banking Relationships
    c. 2018 Board Nominees
    d. CAETS Dues Schedule
4. 2018 CAETS Annual Meeting: 10-14 September 2018, Montevideo, Uruguay
    a. Status Update: ANIU
5. 2019 CAETS Annual Meeting: 24-28 June 2019, Stockholm, Sweden
    a. Status Update: IVA
6. 2020 CAETS Annual Meeting: Korea
    a. Status Update: Secretary/Treasurer
7. Pakistan Membership Application
    a. Due Diligence – Trip Report
    b. Addendum - Subsequent Actions by PAE
    c. Recommendation to Council (Membership, Initial Dues)
8. New Zealand Membership Application
    a. Status Update: Secretary/Treasurer
9. New Business
    a. WFEO Communications

Adjourn

DRAFT: 11 August 2018

Executive Committee Meeting Minutes

Thursday, April 12, 2018 – 9:00—10:30 am
Madrid, Spain: 2:00—3:30 pm
Stockholm, Sweden: 2:00—3:30 pm
SKYPE: lucio.caceres49

National Academy of Engineering of Uruguay
Montevideo, Uruguay

EXCOM Members

Acad. Eng. Lucio Cáceres (President)
Dr. Elías Fereres (Past-President)
Dr. Tuula Teeri (President-Elect)
Dr. Ruth David (Secretary/Treasurer)

Additional Participants

Adriana Gamboggi (ANIU)
Magnus Breidne (IVA)

1. Welcome and approval of agenda

   The President welcomed participants to the telecon; the agenda was approved as presented.

2. Approval of ExCom Minutes of 13 November 2017

   The Minutes were approved as presented.

3. Report of the Secretary/Treasurer

   a. 2018 Dues Status – The Secretary/Treasurer reported that 20 of 26 members had paid 2018 dues.

   b. 2018 Board Nominees – The Secretary/Treasurer reported that members had been solicited for 2019 Board Nominees in accordance with the Rotation Schedule, but only the President-Elect (Korea: Prof. Kwon Oh-Kyong) had been identified to date; reminder notices were to be sent immediately following the meeting.

4. 2018 CAETS Annual Meeting: 10-14 September 2018, Montevideo, Uruguay

   a. Status Update: ANIU – The President reported that planning was well-underway but only a few CAETS member academies had committed to nominate speakers to contribute to the technical program. In addition to increasing CAETS member participation, ANIU was targeting other engineering academies, universities, and industry in Latin America to round out the agenda.

b. Proposed Schedule of Meetings: Secretary/Treasurer – EXCOM members agreed to hold the fall EXCOM meeting as a telecon approximately 2-3 weeks in advance of the Annual Meeting to enable the scheduling of focused discussion groups on Monday of the annual meeting week.

5. 2019 CAETS Annual Meeting: 24-28 June 2019, Stockholm, Sweden

   a. Status Update: IVA – Planning for the 2019 annual meeting has been initiated with the formation of 2 groups of CAETS member countries ("east" and "west") together with appointment of an internal program committee. As planning matures they will reach out to other member academies.

6. 2020 CAETS Annual Meeting: Korea

   The Secretary/Treasurer reported that Korea was beginning to plan for CAETS 2020 and would be prepared to provide an update to the Council in Montevideo.

7. Pakistan Membership Application

   a. Due Diligence – The Secretary/Treasurer provided EXCOM members additional information including: CV of the PAE President, List of Fellows of the PAE, PAE Brochure, 2017 Audited Financial Statements.
   b. On-Site Visit – An updated schedule for the on-site visit was provided. It was noted that the President and Secretary/Treasurer would participate by telephone for a portion of the schedule, while Frank Behrendt (Germany: CAETS Board Member) would visit PAE headquarters in Karachi.

8. New Business

   No new business was identified; the meeting was adjourned.

CAETS Dues Receipts - 2018

Country	Academy		2017	2018	Amount	Received
Argentina	National Academy of Engineering	ANI	1000	1000	1000.00	12/22/2017 (W)
Australia	Australian Academy of Technological Sciences and Engineering	ATSE	6000	6000	6000.00	12/4/2017 (W)
Belgium	Royal Belgium Academy of Applied Sciences	BACAS	2000	2000	2000.00	12/18/2017 (W)
Canada	Canadian Academy of Engineering	CAE	3000	3000	2980.00	3/8/2018 (W)
China	Chinese Academy of Engineering	CAE	6000	6000	5990.00	4/2/18 (W)
Croatia	Croatian Academy of Engineering	HATZ	1000	1000	1000.00	2/13/18 (W)
Czech Republic	Engineering Academy of the Czech Republic	EA CR	1000	1000	1000.00	11/30/2017 (W)
Denmark	Danish Academy of Technical Sciences	ATV	3000	3000	3000.00	1/19/2018 (CK)
Finland	Technology Academy Finland	TAF	3000	3000	2980.00	6/15/18 (W)
France	National Academy of Technologies of France	NATF	3000	3000	3000.00	4/5/18 (W)
Germany	German Academy of Science and Engineering	acatech	3000	3000	3000.00	5/18/18 (W)
Hungary	Hungarian Academy of Engineering	HAE	1000	1000	439.53	5/25/2018 (W)
Hungary	Credit on account				560.47	05/25/18
India	Indian National Academy of Engineering	INAE	6000	6000	5950.00	1/5/18 (W)
Japan	The Engineering Academy of Japan	EAJ	6000	6000	6000.00	1/31/2018 (W)
Korea	The National Academy of Engineering of Korea	NAEK	3000	3000	3020.00	2/28/2018 (W)
Mexico	Academy of Engineering, Mexico	AI	3000	3000	3000.00	6/13/18 (W)
Netherlands	Netherlands Academy of Technology and Innovation	AcT.nl	2000	2000	1985.00	2/16/18 (W)
Norway	Norwegian Academy of Technological Sciences	NTVA	3000	3000	2970.00	2/20/18 (W)
Slovenia	Slovenian Academy of Engineering	IAS	1000	1000	671.63	11/30/2017 (W)
Slovenia	Remainder Payment				328.37	12/15/2017 (W)
South Africa	South African Academy of Engineering	SAAE	1000	1000	1000.00	3/12/2018 (W)
Spain	Royal Academy of Engineering, Spain	RAI	3000	3000	2984.00	2/5/2018 (W)
Sweden	Royal Swedish Academy of Engineering Sciences	IVA	3000	3000	2992.00	5/15/18(W)
Switzerland	Swiss Academy of Engineering Sciences	SATW	3000	3000	2985.00	1/22/2018 (W)
United Kingdom	Royal Academy of Engineering, UK	RAEng	6000	6000	5975.00	2/2/18 (W)
United States	National Academy of Engineering, US	NAE	6000	6000	6000.00	4/23/18 (CK)
Uruguay	National Academy of Engineering of Uruguay	ANIU	2000	2000	2000.00	3/19/18 (W)
			81000	81000	80811.00	

CAETS Banking Relationships

CAETS Secretary/Treasurer Bill Salmon established a CAETS investment account with USAA on 11 August 2004 which held both reserve and operating funds; the USAA account policy at that time permitted both receipt of foreign wire transfers and check-writing. Due to changes in US banking regulations, USAA subsequently eliminated the direct receipt of foreign wire transfers, requiring an intermediate step via a large commercial bank in the US. Further, in approximately 2016 USAA indicated that investment accounts would no longer support check-writing.

In consultation with the Secretary/Treasurer-nominee (Ruth David), a CAETS Business Fundamentals account was established with Bank of America which supported both receipt of foreign wire transfers and check-writing. To open the account, Secretary/Treasurer Bill Salmon transferred $306,624.04 from the USAA account to the Bank of America account on 28 April 2017; both Bill Salmon and Ruth David were named as authorized signatories on the account. A small balance was retained in the USAA account as not all CAETS 2017 dues payments had been received and the Secretary/Treasurer was concerned that some member academies might transmit their payments to the USAA account rather than the newly established Bank of America account.

When Secretary/Treasurer responsibilities transitioned from Bill Salmon to Ruth David both accounts were active. Subsequent to the death of Bill Salmon shortly thereafter, his USAA accounts (both personal and CAETS) entered the "survivor-relations" process and it became clear that while Bill's daughter could access his personal account, no other individual was authorized to access the USAA account. After lengthy consultation with USAA legal and survivor relations staffs, the USAA account was closed and remaining funds ($6,106.94) were transferred to the Bank of America CAETS account on 30 July 2018.

The type of account originally established with Bank of America (Business Fundamentals) levied fees on incoming wire transfers, so after consultation with a Small Business Representative at the Bank of America, the Secretary/Treasurer changed the account type (at no cost) to Business Advantage (which requires a higher funds balance) in March 2018, eliminating wire-transfer fees going forward.

As of 10 August 2018, the CAETS account balance is $327,901.93, with liabilities of approximately $10,000 un unreimbursed expenses.

Two proposed actions are outstanding:

1) Establish a savings/investment account with Bank of America and transfer approximately $225,000 into that "reserve" account, retaining the remainder in an operating account. As long as the accounts are linked CAETS will retain the Business Advantage designation which eliminates banking fees.
2) Authorize a second signer on the account who will be able to provide operational continuity in the event of the unexpected death or incapacitation of the Secretary/Treasurer. The proposed designee is the Director of Finance for the US National Academy of Engineering (who has previously served on the CAETS Audit Committee and is familiar with CAETS operations).

The primary motivating factor is that at present the US NAE hosts the CAETS office, which is expected to ensure operational continuity (per CAETS Bylaws Article 3, Section 3.c). Additionally, CAETS was incorporated in Washington, D.C. under the US Internal Revenue Code Section 501(c)(3) which dictates specific reporting requirements as well as maintenance of corporate registration – evidence of compliance with these requirements is required by the Bank of America, and primary responsibility must be held by a US citizen.

Note: In accordance with Article 3, Section 3.c, the Council may, at its discretion, select a different member academy to host the CAETS office; in such an event, the current corporation would be dissolved and all assets and records would be transferred to the designated member academy who would then be responsible for the operational continuity of CAETS.

2018 CAETS Board Membership:

Officers
Lucio Cáceres, Uruguay (ANIU) – CAETS President
Tuula Teeri, Sweden (IVA) – CAETS President-Elect
Elías Fereres, Spain (RAI) – CAETS Past-President
Ruth David, United States (NAE) – CAETS Secretary/Treasurer

Members 2017-2018
Vladimir Andročec, Croatia (HATZ)
Frank Behrendt, Germany (acatech)
Trueman Goba, South Africa (SAAE)
Ulrich (Ueli) Suter, Switzerland (SATW)

Members 2018-2019
Roger McCarthy, United States (NAE)
Lucas P. J. J. Noldus, Netherlands (AcTI.nl)
Stane Pejovnik, Slovenia (IAS)
István KRÁLIK, Hungary (HAE)

2019 CAETS Board Membership:

Officers
Tuula Teeri, Sweden (IVA) – CAETS President
Oh-Kyong Kwon (NAEK) – CAETS President-Elect – NOMINATED
Lucio Cáceres, Uruguay (ANIU) – CAETS Past-President
Ruth David, United States (NAE) – CAETS Secretary/Treasurer

Members 2018-2019
Roger McCarthy, United States (NAE)
Lucas P. J. J. Noldus, Netherlands (AcTI.nl)
Stane Pejovnik, Slovenia (IAS)
István KRÁLIK, Hungary (HAE)

Members 2019-2020 – NOMINATED
Hugh Bradlow, Australia (ATSE)*
LI Xiaohong, China (CAE)
Panu Nykanen, Finland (TAF)
Dr. Sanak Mishra, India (INAE)

*Argentina deferred 2019 Board Nominee due to expected nomination of President-Elect in 2020. Australia was next on the Rotation Schedule.

Professor Oh-Kyong Kwon
President of the National Academy of Engineering of Korea
HYU Distinguished Professor of Hanyang University

E-Mail: okwon@hanyang.ac.kr

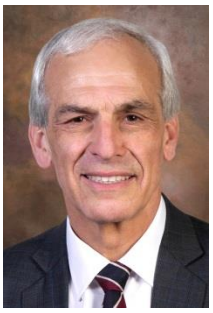
Dr. Oh-Kyong Kwon received the B.S. degree in electronic engineering from Hanyang University, Seoul, Korea, in 1978, and the M.S. and Ph.D. degrees in electrical engineering from Stanford University, Stanford, CA, USA, in 1986 and 1988, respectively.

From 1987 to 1992, he was with the Semiconductor Process and Design Center, Texas Instruments Inc., Dallas, TX, USA, where he was engaged in the development of multichip module technologies and smart power integrated circuit technologies for automotive and flat panel display applications. In 1992, he joined Hanyang University, Seoul, Korea, as an assistant professor at the Department of Electronic Engineering, where he is now a distinguished professor. Dr. Kwon had served the positions of the Dean of Engineering School, and the Provost and the Senior Vice-President of Hanyang University. He also served as an Executive Vice-President of the National Academy of Engineering of Korea, where he is now a President.

Dr. Kwon had served as a committee member of IEEE International Solid-State Circuits Conference, IEEE International Electron Devices Meeting, and IEEE EDS Distinguished Lecturer. He received Fellow Award and Special Recognition Award from Society for Information Display, Appreciation Award from SEMI (Semiconductor Equipment and Materials International), Young Engineer Award from National Academy Engineering of Korea, and Best Patent Award from Korean Intellectual Property Office.

His research interests include mixed mode signal circuit design, analog front-end circuit design for various sensors and bio-medical instruments, the driving methods and circuits for flat panel displays, high-speed interface circuits for DRAM and display systems, smart power integrated circuit technologies, and electrical noise modeling for high-speed system-level integration. He has authored and co-authored over 345 international journal and conference papers and holds 229 U.S. patents.

ATSE BOARD OF DIRECTORS 2018



Professor Hugh Bradlow FTSE
President

Professor Bradlow is President of the Australian Academy of Technology and Engineering. He is also an independent Non-Executive Director of Silicon Quantum Computing Pty Ltd.

He was previously Chief Technology Officer and Head of Innovation at Telstra, responsible for the R&D of new technologies and their introduction into Telstra's business. Subsequently he became Chief Scientist at Telstra, in which role he advised the Telstra Board and management on the longer term technology directions and technology disruption anticipated to impact Telstra and its customers.

Before joining Telstra in September 1995, Professor Bradlow was Professor of Computer Engineering at the University of Wollongong in Australia and Professor of Electrical Engineering (Digital Systems) at the University of Cape Town.

Professor Bradlow is a graduate in electrical engineering from the University of Cape Town in 1973 and received the D.Phil. degree for research in experimental nuclear physics from the University of Oxford. He is an Emeritus Professor of the University of Wollongong, a Professorial Fellow of the University of Melbourne, and a recipient of a Centenary Medal from the Commonwealth of Australia.

He is globally recognised as a thought leader in telecommunications and was elected as the joint 2009 Australian Telecommunications Ambassador of the Year, named by Global Telecom Business as one of the most 100 most influential telecommunications executives in the world and Smart Company designated him as one of the 12 most influential people in Australian ICT.

Bio of Prof. LI Xiaohong

Prof. LI Xiaohong is the President of the Chinese Academy of Engineering (CAE). He holds a PhD in engineering and is a member of CAE. He also serves as a member of the Discipline Assessment Group of the Academic Degree Commission of the State Council, an Executive Director of China Coal Society, and a Chief Scientist of the 973 Program. His past positions include Vice Minister of Education of China, President of Wuhan University, President of Chongqing University, and the Director of the State Key Laboratory of Coal Mine Disaster Dynamics and Control.

Prof. LI studied in the Mining Department of Chongqing University during 1978 to 1985 and obtained his Bachelor's Degree and Master's Degree. In 1993, he obtained his PhD in mining engineering in Chongqing University. He was a research fellow at the University of California Berkley, USA from 1989 to 1991, and a visiting scholar at Queensland University of Technology, Australia in 1996.

As an expert in mining safety technologies, he has been committed to the research of coal mine gas control. His research has generated remarkable economic and social benefits through the new developments in ways to prevent mining gas accidents and improve gas mining efficiency. Prof. LI is a winner of the China National Funds for Distinguished Young Scientists and an honorary professor at the University of Queensland, Australia. Prof. LI has also been honored with the National Scientific and Technological Progress Award and international academic awards for several times. He has 6 books and over 200 papers published.

Prof. LI was a member of the 11th CPPCC, a representative of the 12th NPC, a delegate of the 18th CPC National Congress, and is now a member of the 19th CPC Central Committee.

1. **Full name and date**
   - Nykänen, Panu Kullervo
   - male
   - CV 15.6.2018

2. **Date and place of birth, nationality, current residence**
   - b. 17.3.1961 Tampere, Finland
   - Finnish
   - Kerkkoontie 189, 06530 Kerkkoo, Finland

3. **Education and degrees awarded**
   - PhD, University of Helsinki, Finnish and Scandinavian history, y. 2000
   - Phil. Lic. University of Helsinki, Finnish history, y. 1995
   - Bachelor of Arts, University of Helsinki, archaeology, y. 1992
   - title of docent: Finnish and Scandinavian history, University of Helsinki, 18.6.2014
   - title of docent: History of technology, Helsinki University of Technology, 1.6.2005–31.5.2010

4. **Other education and training, qualifications and skills**
   - Coast Guard Diploma, y. 2007
   - CEVNI - Code européen des voies navigation intérieure diploma, y. 2010

5. **Linguistic skills**
   - Finnish, mother tongue
   - Swedish, English, some German, French

6. **Current position**
   - Academy Secretary, Council of Finnish Academies CoFA. 28.8.2017 – 15.10.2018
   - Secretary General, Finnish Academy of Technical Sciences TTA. Y. 2011–

7. **Previous work experience**
   - Researcher, University of Jyväskylä, 1.6.2014–15.3.2017
   - Secretary General, Council of Finnish Academies, 2013–2014
   - Adjunct Professor, Aalto-University, 2010–2013
   - Researcher, Helsinki University of Technology 1999–2010
   - Several different positions, University of Helsinki, National Board of Antiquities etc.

8. **Research funding as well as leadership and supervision**
   - Several research fundings, 1994–2015. Alfred Kordelin Foundation, Outokumpu Ltd Foundation, Hallin Foundation etc.

- Officially appointed supervisor to undergraduate and post-graduate students/doctoral students, several.

9. **Merits in teaching and pedagogical competence** (if required, complement by submitting a teaching portfolio)
   - responsibility over several university courses e.g. Aalto-university Kon-0.4710 History of Industrialization - Suomen teollistumisen historia, Kon-4720 Histroy of reseach and technology - teknillisen tutkimuksen ja opetuksen historia ja Kon-4730 Cultural history of Technology - Tekniikan kulttuurihistoria 2010, 2011 ja 2012. University of Jyväskylä HISA514 Euroopan taloushistoria, October 2015, 2016; History of Technology - Suomen tekniikan historia HISTPO16 helmikuussa 2015; HISA512 Changes in Economic history - Suomen elinkeinoelämää muuttavat tekijät October – November 2014; HISA511 Global Economy November 2015.

10. **Awards, prizes and honours**
    - Society for the History of Technology in Finland, honorary member, y. 2008
    - Society for the History of Technology in Finland, silver medal, y. 2002
    - Right to use the cap of the engineering profession, y. 2001
    - Honorary prize “pultti” N:o 8, Engineers Association in Helsinki – Helsingin Insinöörit, y. 2002

11. **Other academic merits**
    - service as a pre-examiner or as an opponent of a doctoral dissertation, as a member in dissertation committees, several cases
    - evaluation of academic/scientific or artistic competence (e.g. title of docent), several cases
    - memberships and positions of trust in scientific and scholarly societies, Chair and secretary of the National committee for the history of technology, y. 2010–2017
    - editor-in-chief, Tekniikan Waiheita, Finnish Journal for the History of Technology 1995 - 2001
    - referee for scientific and scholarly journals

12. **Scientific and societal impact of research**
    - total number of publications: 39 major publications (peer revieved and monographs), app. 155 other articles (partly peer reviewed) and publications

13. **Positions of trust in society and other societal merits**
    - Finnish Academy of Technical Sciences TTA, ordinary member 2009–
    - Board member, Vice president International Council of Museums, International Committee University Museums and Collections UMAC 2007–2016
    - Society for the History of Technology in Finland, Board member 2002–2013, 2015 –, Chair 2004–2007
    - Universeum, European Academic Heritage network, Reflection group member 2007; Interim board member 2007–2010; Board member 2011–2012
    - Finnish Armed forces, corporal 1981

Dr. Sanak Mishra

Dr Sanak Mishra is an icon of the Indian steel industry and is acclaimed as a brilliant scientist and Metallurgist. He is presently Senior Advisor, Mishra Dhatu Nigam Limited (MIDHANI), Hyderabad. Previously, he has held the appointments of Secretary General and Executive Head of the Indian Steel Association, and Vice President of ArcelorMittal and Chief Executive Officer of its Projects in India. He established in Kolkata the ArcelorMittal Design & Engineering Centre as a global group facility for the company. Earlier he had held the position of Managing Director of the Rourkela Steel Plant of the Steel Authority of India Ltd (SAIL). Dr Mishra obtained his B.E. degree in Metallurgy from the Indian Institute of Science, Bangalore. He then received M.S. and PhD degrees in Metallurgical Engineering from University of Illinois at Urbana-Champaign, USA. He is credited with the discovery of magnetic clusters in dilute alloy systems of iron, nickel and copper, and the discovery of the texture memory effect in grain-oriented electrical steels. In 1980, he had received the prestigious Alexander von Humboldt International Fellowship from Germany and spent two years as Visiting Scientist at the Aachen Technical University wherein he worked in the areas of deep drawing automotive steels and energy efficient electrical steels. He is a recipient of numerous awards and recognitions including the National Metallurgist Award from the Ministry of Steel, Government of India; JRD Tata Award for Excellence in Corporate Leadership in Metallurgical Industries and the Platinum Medal of the Indian Institute of Metals. He was conferred the Centenary Year Distinguished Alumni Award from the Indian Institute of Science, Bangalore in 2008, and the Distinguished Merit Alumni Award from the Department of Materials Science & Engineering at the University of Illinois at Urbana-Champaign (USA) in 2010. Dr. Mishra served as the President of the Indian Institute of Metals during 2009-10.

CAETS Dues Schedule

CAETS Operating Procedures pargraph 4.b: For 2006 a 3-level annual dues structure of $1,000, $3,000, and $6,000 was introduced with member academies placed at levels approved by the Council, with the understanding that these could be changed by agreement of the Council or by the Board of Directors between Council meetings. (Established per Council discussion in 2004 and agreed to by Council in 2005.)

From the minutes of the CAETS Council Meeting on July 7, 2005: "The President, noting that not all were entirely comfortable with the outcome of this process, proposed that the Council agree to the tiered strucure and distribution as presentd and then discuss and record reservations.... The reservations included: those academies paying the lowest level of dues should do so on a well justified basis and endeavor to strengthen their financial basis and increase their dues payment to the middle level in the near term; decisions by the Board on these matters should be transparent and without the potential for conflict-of-interest." Three countries (indicated below) have since increased their annual dues payments from $1,000 to $2,000.

From the minutes of the CAETS Council Meeting on September 15, 2016: The Council ageed that the dues for FY2019 would be increased by 3%.

Questions for consideration: 1) What constitutes sufficient justification for countries to remain at the lowest tier level? (At present, the annual dues letter encourages academies to increase their level of dues contribution citing the Council reservation above.) 2) It was agreed in 2016 to increase dues in 2019 by 3%; should we consider a periodic increase? 3) Assuming Pakistan is elected as a member, at what level should their initial dues be set (effective 2019) -- e.g. $1000 or $1030?

Elected	Country	Academy		2017	2018	2019	$1K to $2K
1978 (F)	Australia	Australian Academy of Technological Sciences and Engineering	ATSE	6000	6000	6180	
1997	China	Chinese Academy of Engineering	CAE	6000	6000	6180	
1999	India	Indian National Academy of Engineering	INAE	6000	6000	6180	
1990	Japan	The Engineering Academy of Japan	EAJ	6000	6000	6180	
1978(F)	United Kingdom	Royal Academy of Engineering, UK	RAEng	6000	6000	6180	
1978(F)	United States	National Academy of Engineering, US	NAE	6000	6000	6180	
1991	Canada	Canadian Academy of Engineering	CAE	3000	3000	3090	
1987	Denmark	Danish Academy of Technical Sciences	ATV	3000	3000	3090	
1989	Finland	Technology Academy Finland	TAF	3000	3000	3090	
1989	France	National Academy of Technologies of France	NATF	3000	3000	3090	
2005	Germany	German Academy of Science and Engineering	acatech	3000	3000	3090	
2000	Korea	The National Academy of Engineering of Korea	NAEK	3000	3000	3090	
1978 (F)	Mexico	Academy of Engineering, Mexico	AI	3000	3000	3090	
1990	Norway	Norwegian Academy of Technological Sciences	NTVA	3000	3000	3090	
1999	Spain	Royal Academy of Engineering, Spain	RAI	3000	3000	3090	

CAETS Dues Schedule

1978(F)	Sweden	Royal Swedish Academy of Engineering Sciences	IVA	3000	3000	3090	
1988	Switzerland	Swiss Academy of Engineering Sciences	SATW	3000	3000	3090	
1990	Belgium	Royal Belgium Academy of Applied Sciences	BACAS	2000	2000	2060	*2016*
1993	Netherlands	Netherlands Academy of Technology and Innovation	AcT.nl	2000	2000	2060	*2016*
2000	Uruguay	National Academy of Engineering of Uruguay	ANIU	2000	2000	2060	*2014*
1999	Argentina	National Academy of Engineering	ANI	1000	1000	1030	
2000	Croatia	Croatian Academy of Engineering	HATZ	1000	1000	1030	
1999	Czech Republic	Engineering Academy of the Czech Republic	EA CR	1000	1000	1030	
1995	Hungary	Hungarian Academy of Engineering	HAE	1000	1000	1030	
2000	Slovenia	Slovenian Academy of Engineering	IAS	1000	1000	1030	
2009	South Africa	South African Academy of Engineering	SAAE	1000	1000	1030	
				81000	81000	83430	

(F) - Founding Member

CAETS Dues Schedule

6 August 2018

CAETS 2020: June 22-25, 2020
HOST: NAEK
THEME: Engineering a better world – Smart Society
LOCATION: Seoul, Korea

Proposed Schedule:

Monday, June 22	Board Meeting (morning)
	CAETS Committees/Discussions (afternoon)
	Welcome Reception
Tuesday, June 23	Symposium (full day)
Wednesday, June 24	Symposium (morning)
	Council Meeting (afternoon)
Thursday, June 25	Technical Tour

Note: NAEK is preparing a presentation for the Council meeting that will include greater detail. Council agreement is needed for 1.5-day symposium (anything more than 1 day requires approval).

Report of the CAETS Visiting Committee to the Pakistan Academy of Engineering Karachi, Pakistan – May 1-2, 2018

Introduction

By letter to CAETS Secretary/Treasurer Ruth David, dated April 14, 2017, the President of PAE, Dr. -Ing. Jameel Ahmad Khan, asked that PAE be considered for membership in CAETS. The letter included as an attachment a copy of the Memorandum of Association of The Pakistan Academy of Engineering which delineates PAE Aims and Objects, By-laws, selection criteria for Fellows, functions of the Assembly (the highest decision-making body), and composition of the Council (provides day-to-day management of the PAE). Additional information relating to PAE qualifications for membership, including a summary of activities and audited financial statements is provided on the PAE website (www.pacadengg.org). In advance of the visit to the PAE, biographies of all Fellows were provided for review.

PAE President Dr. -Ing. Jameel Ahmed Khan has demonstrated sustained interest in CAETS activities, having attended CAETS Council Meetings as an observer in 2015 (Delhi, India), 2016 (London, UK), and 2017 (Madrid, Spain).

On-Site Due Diligence

The visit to the PAE headquarter in Karachi, Pakistan, took place May 1-2, 2018. CAETS representatives involved were Prof. Dr. Frank Behrendt (acatech, CAETS Board Member) as onsite visiting representative together with Eng. Lucio Cáceres (ANIU, CAETS President) and Dr. Ruth David (CAETS Secretary/ Treasurer) who participated via teleconference.

Brief Summary of Agenda Highlights

PAE was represented by its President, Dr.-Ing. Jameel Ahmad Khan, as well as several members of its Council, the Executive Board and additional Fellows of the academy, including: Dr. Shahid Alam, Dr. Nasim A Khan, Dr. Afzal Haque, Dr. Noorullah Soomro, Dr. M. Imran Aslam, Dr. Azal Haque (Vice Chancellor of Sir Syed University), Dr. Mushahid H. Hashmi (Chairman Automotive Engineering Department, NED University), Dr. Ahmad Hussain (Director ORIC, SZABIST University), Mr. Nadeem Arif (Secretary Outreach Committee, PAE). The majority of the persons listed above attended the meeting continuously and were actively engaged in the discussions.

The full agenda for the visit is provided in Appendix A.

The meeting began with an introduction of the PAE Fellows present and a description of the background and history of the academy by PAE President Jameel Ahmad Khan. PAE was registered on December 20, 2013 as a Society under Pakistan's Societies Registration Act XII of 1860. On March 5, 2014, The Pakistan Academy of Engineering Endowment Fund was registered as a Trust under the Pakistan Trust Act of 1882. The Trust was established to do all acts and deeds required for efficient management of the PAE Endowment Fund so that sufficient resources are available to the PAE to carry out its objectives. Both entities filed for registration as non-profit organizations. The PAE expects the process of recognition to be completed at the end of the current financial year.[1] Further details with respect to the

[1] See ADDENDUM: Certifications granted May 8, 2018

financial situation of PAE will be discussed in the context of qualifications for membership in part f of this report.

The atmosphere of this two-day meeting was very open and friendly. All information and materials requested by the CAETS representative were supplied promptly, and questions were answered exhaustively. Consequently, it can be stated that based on the information supplied both prior to and during the visit, a solid foundation was established for the recommendation provided in the concluding section of this report.

The discussion between PAE and the CAETS representative followed the criteria for membership as defined in the CAETS Bylaws. Key elements of this discussion are summarized below.

Summary of PAE Qualifications for CAETS Membership

In accordance with CAETS Bylaws, Article 2 – Council Membership; Section 3 – Criteria for Membership: A member of CAETS shall:

a. Be representative of the engineering and technological community of that country;

In accordance with Article 2 of its Memorandum of Association, PAE aims to promote the advancement of science, art, and practice of engineering for the benefit of Pakistan. It aims to be a national forum for discussions around these topics, and to give independent advice on them. These are classic objectives of CAETS member academies. Additional information regarding PAE's past and planned programs and activities is provided in part e.

PAE's fellowship is comprised of representatives from academia as well as industry. The biographies of the current fellows show that many of them are, or have been, in influential positions in engineering in both sectors. As one example, PAE's current president has been the chairman of the Pakistan Engineering Council and the President of the Pakistan Chamber of Engineers for six years each. Both bodies represent Pakistan's engineering profession across all disciplines. The current PAE fellowship reflects the breadth of engineering specialization in Pakistan, as evidenced by the biographies reviewed.

PAE clearly fulfills the requirement of this part of CAETS's Bylaws.

b. Subscribe to the nonpolitical, non-governmental international character of the Council;

PAE's only source of funds at present is the above-mentioned Pakistan Academy of Engineering Endowment Fund, a non-profit organization. This was motivated and justified by the academy's wish to stay clear of governmental financing to avoid any kind of dependency. This allows PAE to fulfill the non-political, non-governmental character to be honored by all CAETS member academies.

PAE also has demonstrated international engagement through its interactions with Industry, Associations, Consultants, Government agencies, Academia & Engineering bodies. *A list summarizing organizational interactions is provided in Appendix B*.

PAE clearly fulfills the requirement of this part of CAETS's Bylaws.

c. Have a peer elected membership with criteria for election based on significant personal contributions to engineering, technological sciences, or related activities;

PAE Membership is by invitation only, based on clear criteria requiring candidates to have at least a PhD in engineering or equivalent degree from a recognized institution. Further, in accordance with PAE By-Laws, Article 4, "the fellowship shall be interpreted to include important or unusual personal contributions or accomplishments and may be in specific technical areas, in the integration of technologies, in the noteworthy leadership of a group involved in significant innovation of technological progress and as may be further interpreted by the Academy from time to time." It is expected that the Fellows together cover all relevant fields of engineering. Foreign Fellows may not constitute more than 20 percent of the membership.

The current number of Fellows is 37. PAE expects to grow steadily in the coming years until the total number of 100 set by PAE By-laws is achieved. The annual growth rate should not exceed 25 fellows.

One aspect which needs to be better-aligned with respect to CAETS Bylaws is that currently PAE'S Council (President, one of the Founding Fellows of the academy as Vice-President, five Fellows elected by the membership, and the Executive Secretary as a non-voting member) elects new Fellows from the list of candidates nominated by current Fellows. The term "peer-elected membership" aims at having new Fellows elected by all existing Fellows rather than by a selected subset (e.g. Council). The future role of the Council with respect to the election could be one of a selection committee forwarding a list of vetted candidates to the full membership for vote. PAE's leadership agreed to adopt this change and will submit a statement regarding this to CAETS. The formal adaption of the By-laws will be a multi-year effort due to the way the Pakistani administration deals with such matters.[2]

d. Be governed by its elected membership;

While the PAE's Council was elected by the fellowship, membership in this body is currently for life, with the need for stability and continuity during the start-up period of the academy given as reason. The current Council is the driving force for the activities of the academy. PAE's leadership agreed to adopt terms for Council members as well as rules limiting the number of terms to which a Fellow can be elected. A statement regarding the necessary change of the By-laws will be submitted to CAETS.[2]

Appropriate term limits and rules also will be implemented for the PAE's officers (President, Vice-President, etc.). A term lengths of 3 to 5 years will be discussed. Again, a statement regarding the necessary change of the By-laws will be submitted to CAETS.[2]

e. Be engaged in significant activities demonstrating that its objectives are compatible with the objectives of CAETS;

PAE established a series of half-day symposia (typically three per year) functioning as key exchange mechanisms between academia, government and industry. Titles of recent symposia are (*a more comprehensive list of past and planned symposia is provided in Appendix C*):

- Innovative Thar Coal Value Chain (2017)
- Hydrogen, Carbon-Free-Fuel, Democratizing the Energy (2017)
- Cybersecurity - Where do we stand? (2017)

[2] See ADDENDUM: Statement of Intent 14 May 2018; Adopted by PAE Assembly 4 August 2018

- Prospects of Mini Nuclear Power Plants in Pakistan (2018)

In addition to the series, five institutes (similar to, e.g., topical networks of fellows of acatech) have been established by PAE:

- The Institute of Technology Assessment and Transfer
- Centre for Advanced Energy Studies
- Water & Wastewater Technologies
- Institute of Manpower Dynamics
- Institute of Cybersecurity Management

In these institute/workgroups, Fellows of PAE and others generate reports, studies, and other publications relating to the respective topics.

PAE also employs a "Knowledge Forum" model to share information relating to selected "Technology Alerts." (*a summary of related activities is provided in Appendix D*).

PAE clearly fulfills the requirement of this part of CAETS's Bylaws.

f. Have sufficient financial support to pay the costs of CAETS membership and the costs of participation in CAETS activities.

The above-mentioned Trust (Pakistan Academy of Engineering Endowment Fund) based on long-term commitments by engineering individuals forms the basis for a sustainable operation of the academy. The application for being accepted as tax-free entity has been submitted for both the trust and the academy and is expected to be granted in the upcoming months.[3]

Currently, the trust pays for staff, rent, etc. of the academy to avoid a double taxation until the tax-free status is achieved. Audited financial statements are available on the academy's website for both entities.

After receiving the tax exemption for both entities, the trust will act as money collector from supporters and "treasure chest" supporting the academy by transferring annual lump sums to it. The operational budget will then be within the Academy.

The expected annual budget of approximately $50,000 to $100,000 USD will be sufficient for a sustainable operation of PAE within CAETS's framework.

PAE clearly fulfills the requirement of this part of CAETS's Bylaws.

Recommendation to Council

On the basis of PAE's presentations and subsequent discussions, with particular attention to its statutes, reputation, financial strength and impressive recent record, the CAETS Visiting Committee agreed that PAE fully meets the criteria for membership of CAETS (Section 3 of the Bylaws). The Committee concluded, therefore, that there is a compelling case for its election to CAETS at the meeting of Council on 13 September 2018.

[3] See ADDENDUM: Certifications granted 8 May 2018

Appendix A. Agenda for Visit

Agenda for CAETS Team Visit to the PAE

CAETS Officers:	**Name: Mr. Lucio Caceres, President** **Name: Dr. Frank Behrendt, Board Member**
Focal Person:	**Name: Dr.-Ing. Jameel Ahmad Khan** **Designation: President**
Visit Scheduled On:	**May 1 & 2, 2018**

Details of the Schedule:

May 1, 2018

ITEM	TIMING
• Arrival of CAETS Team at the PAE's Head Office	1300hrs
• Welcome of CAETS Team by the President, PAE	1305hrs – 1310hrs
• Introduction of CAETS & PAE team members and quick tour to the Academy Facility	1310hrs – 1330hrs
• **Lunch Break**	1331hrs – 1440hrs
• General Discussion by the CAETS team on the Criteria for the membership and the membership application	1441hrs – 1520hrs
• Introduction of PAE by Dr.-Ing. Jameel Ahmad Khan, President	1521hrs – 1600hrs
• Conduct of Business during the last four years by the Fellows of PAE (Dr. Shahid Alam, Dr. Nasim A Khan, Dr. Afzal Haque, Dr. Noorullah Soomro and Dr. M. Imran Aslam)	1601hrs – 1630hrs
• General Discussion with Council and Fellow members on the CAETS membership expectations for both CAETS and PAE including Feedback & Review	1631hrs – 1655hrs
Break before Video Telecom	1656hrs – 1659hrs
• Skype Call / Telecom with Mr. Lucio Caceres & Dr. Ruth A. David	1700hrs – 1830hrs
• Departure for Hotel	1845hrs

May 2, 2018

ITEM	TIMING
• Arrival CAETS Team at the PAE's Head Office	0930hrs
• Meeting with Dr. Azal Haque, Vice Chancellor of Sir Syed University	0930hrs – 1030hrs
• Meeting with Dr. Mushahid H. Hashmi, Chairman Automotive Engineering Department, NED University	1031hrs – 1130hrs
• Meeting with Dr. Ahmad Hussain, Director ORIC, SZABIST University	1131hrs – 1230hrs
• Meeting with Mr. Nadeem Arif, Secretary Outreach Committee, PAE	1231hrs – 1330hrs
Lunch Break	1331hrs – 1430hrs
• General discussion, review and feedback by CAETS team	1431hrs – 1645hrs
Break before Video Telecom	1646hrs – 1659hrs
• Skype Call / Telecom with Mr. Lucio Caceres & Dr. Ruth A. David	1700hrs – 1830hrs
• Departure for Hotel	1845hrs

Appendix B. – PAE Interactions

PAE is already interacting with Industry, Associations, Consultants, Government agencies, Academia & Engineering bodies.

This includes:

a. **Industries (Mills, Constructors, Banks, Cybersecurity & Engineering Consultants, Firms etc.) :-**

1. Indus Motors Co. Ltd.
2. Merck (Pvt.) Ltd.
3. Thal Engineering
4. Cargill Pakistan Holdings (Pvt.) Ltd.
5. Sindh Engro Coal Mining Company (SECMC)
6. Principal Builders
7. Ravian Maritime (Pvt.) Ltd.
8. Sui Southern Gas Company Ltd.
9. McDonald's – SIZA Foods (Pvt.) Ltd.
10. EMC Pakistan (Pvt.) Ltd.
11. Nippon Steel & Sumikin Engineering Co. Ltd.
12. Chiyoda U Tech Co. Ltd.
13. Linde Pakistan Ltd.
14. M11 Group, Canada
15. Trend Micro
16. Bank Al-Habib Ltd.
17. Mr. Mohammad Irshad, Consultant Nuclear Power Plants, Lincoln, California, USA
18. Exponent Engineers (Pvt.) Ltd.
19. Osmani & CO.
20. Silicon Valley Builders, USA - (Mr. Mike Zaidi)
21. Mr. Shakeel Rahman, Consultant Operational Analysis, Health Care, USA
22. National Bank of Pakistan
23. Engineering Services Group, USA
24. Kia Lucky Motors Pakistan Limited
25. Technology Links (Pvt.) Ltd.
26. International Steels Limited
27. National Refinery Limited
28. EA Consulting (Pvt.) Ltd.
29. DHA Cogen Limited
30. Engineering Consultants International (Pvt.) Ltd.
31. Zishan Engineers (Pvt.) Ltd.
32. Pakistan Refinery Limited (PRL)
33. Habibullah Associates (Pvt.) Ltd.
34. MOORE STEPHENS – Shekha & Mufti Chartered Accountants
35. Qavi & Company Chartered Accountants

36. Lear Corporation - USA
37. Premier Systems (Pvt) Ltd.
38. Environmental Consultancy Services (ECS)
39. DICE Foundation – USA
40. MM Pakistan (Pvt.) Ltd.
41. Al-Abbas Printers
42. Friends Construction Syndicate (Pvt.) Ltd.
43. SOILMAT Engineers (SME)
44. Insight Engineering
45. House of Habib
46. ESS.I.AAR (Planning, Engineering & Services Consultants)
47. Pakistan International Airline (PIA)
48. Japan Coal Energy Center (JCOAL)
49. SIEMENS Saudi Arabia
50. Habib Metropolitan bank Ltd.
51. Civil and Structural Engineering Consultants, Karachi
52. AAA Partnership (Pvt.) Ltd.
53. NESPAK Karachi Office

b. Academia & Agencies (Government/Private) :-

1. Institute of Applied Energy, Japan (IAE)
2. Pakistan Japan Business Forum
3. Pakistan Atomic Energy Commission (PAEC)
4. Pakistan Science Foundation (PSF)
5. Pakistan Scientific and Technological Information Centre (PASTIC)
6. National Engineering and Scientific Commission (NESCOM)
7. Indus University
8. NED University of Engineering & Technology (NEDUET)
9. Hamdard University
10. International Council of Academies of Engineering & Technological Sciences, INC. (CAETS)
11. Information Systems Audit and Control Association (ISACA)
12. The Citizens Foundation (TCF)
13. National University of Computer and Emerging Sciences (NUCES-FAST)
14. SZABIST University
15. Usman Institute of Technology (UIT)
16. GIK Institute of Engineering, Sciences and Technology
17. Sir Syed University of Engineering & Technology (SSUET)
18. Newports Institute of Communication & Economics
19. Dawood University of Engineering and Technology
20. Pakistan American Cultural Center (PACC)
21. Aviation Institute of Management (AIM)
22. PAF Karachi Institute of Economics and Technology (PAEF KIET)
23. SAARC Energy Centre
24. Asian Institute for Environmental Research & Energy (A-NERGY)
25. Institute of Business Management (IBM)
26. Pakistan Workers Federation (PWF)

27. Medicell Institute of Higher Education & Training
28. Shehri-Citizens for a Better Environment (Shehri-CBE)
29. Jang Group of Newspapers
30. Nawa-i-Waqt Group
31. Thar Coal & Energy Board (TCEB)
32. Dept. of Physical Medicine and Rehabilitation JPMC Karachi
33. DHA Suffa University
34. Asia Pacific Union for Housing Finance (APUHF)
35. Pakistan Council of Scientific & Industrial Research (PCSIR)
36. Deutscher Akademischer Austauschdienst – German Academic Exchange Service (DAAD Pakistan)
37. Goethe-Institut Pakistan – German Cultural Center
38. National Organisation Wasserstoff - und Brennstoffzellentechnologie, Germany
39. Energy Dept. Govt. of Sindh
40. Karachi Development Authority (KDA)
41. NEDIAN Social Engineers Trust (NEDIAN SET)
42. Korea Atomic Energy Research Institute (KAERI)
43. Ummul Qura University, Makkah, Saudi Arabia
44. Mehran University of Engineering & Technology (MUET)
45. Pakistan Centre for Philanthropy (PCP)
46. National University of Sciences and Technology (NUST)
47. Space & Upper Atmosphere Research Commission (SUPARCO)

c. Consulates & Embassies:-

1. U.S. Consulate General Karachi
2. Consulate General of the Islamic Republic of IRAN Karachi
3. Consulate-General of Japan in Karachi

Appendix C. PAE Symposia

The Pakistan Academy of Engineering

List of Symposia:

- **Symposium 1:**
  Prospects of E-MOBILITY in Karachi
  (December 20, 2014)

- **Symposium 2:**
  Engineering and Health Care Nexus in Pakistan
  (June 13, 2015)

- **Symposium 3:**
  Industrial Renaissance and Competitiveness for Pakistan
  (August 1, 2015)

- **Symposium 4:**
  Drinking Water
  (October 31, 2015)

- **Symposium 5:**
  Coal-to-Liquids (CTL) Technology for Pakistan
  (January 30, 2016)

- **Symposium 6:**
  Additive Manufacturing
  (July 30, 2016)

- **Symposium 7:**
  Innovative Thar Coal Value Chain
  (February 04, 2017)

- **Symposium 8:**
  Hydrogen, Carbon-Free-Fuel, Democratizing the Energy
  (July 01, 2017)

- **Symposium 9:**
  Cybersecurity – Where do we stand?
  (December 16, 2017)

- **Symposium 10:**
  Prospects of Mini Nuclear Power Plants in Pakistan
  (April 28, 2018)

- **Symposium 11:**
  Our Mineral Resources – The Most Neglected Sector
  (November 03, 2018)

- **Symposium 12:**
  Bioeconomy & Engineering Nexus
  (March 02, 2019)

- **Symposium 13:**
  Preparing for Our Digital Economy
  (July 06, 2019)

Appendix D. Knowledge Forum

The Pakistan Academy of Engineering

Knowledge Forum

LIST OF PROGRAMMES

1. **Wireless Power Transfer – Application in Hybrid – Electric Vehicles**
   (October 03, 2015)

2. **Digital Transformation**
   (March 19, 2016)

3. **Advances in Engineering Education**
   (July 16, 2016)

4. **Wind Farming in Pakistan**
   (October 01, 2016)

5. **Dematerialization and its impact on Industry**
   (December 31, 2016)

6. **Profile of the Future Engineer**
   (September 23, 2017)

7. **Business Strategy for Engineering Organizations in Pakistan**
   (February 03, 2018)

8. **Materials Science and Engineering of Epoxy Based Composites**
   (May 05, 2018)

Pakistan Centre *for* Philanthropy

(The first NPO Certification Agency, authorized by The Government of Pakistan vide notification No.1116 (I)/2003)

Pakistan Centre *for* Philanthropy hereby certifies that
according to the records of the organization

The Pakistan Academy of Engineering

is certified as per NPO evaluation standards notified by FBR.

Executive Director

Seal of NPO Good Practices
Pakistan Centre for Philanthropy

PCP-2018/582

Certification No.

8-05-2018	**8-05-2021**	**Islamabad**
Issued on	Valid up to	Place of issue

Certification Expiry:

- Validity of regular certification is:

  Three (3) years from the time of issuance.

- Validity of provisional certification is:

  One (1) or two (2) years from the time of issuance.

Disclaimer

PCP certification is based on an examination of the NGOs/ INGO's functioning and performance during the last one/ two/ three years in the light of its objectives as stated in its governing document and certifies that the organisation meets the requirements as per the set standards notified by FBR. All opinions expressed in this report are based on the information provided by the organisation. PCP does not take any responsibility for, nor makes any express or implied guarantee as to the accuracy or the comprehensiveness of this information as only the information provided voluntarily by the organisation forms the basis of this report. Certification by PCP is voluntary and optional does not guarantee non-profit status, as this is a matter for determination by FBR and the relevant Commissioner of Inland Revenue. Furthermore, PCP certification is not a security clearance and PCP does not give any security clearance. All NGOs/INGOs are still subject to security clearance from the Ministry of Interior and other concerned Ministries and Law Enforcement Agencies of the Government of Pakistan and other Provincial Governments.

We recommend contacting PCP office for verification / validation of the Certification Award.
Contact us: +92 51 2286531-32 Email: mail@pcp.org.pk or visit our website at www.pcp.org.pk

Pakistan Centre *for* Philanthropy

(The first NPO Certification Agency, authorized by The Government of Pakistan vide notification No.1116 (I)/2003)

Pakistan Centre *for* Philanthropy hereby certifies that
according to the records of the organization

Pakistan Academy of Engineering- Endowment Fund

is certified as per NPO evaluation standards notified by FBR.

Executive Director

Seal of NPO Good Practices
Pakistan Centre for Philanthropy

PCP-2018/583

Certification No.

8-05-2018	**8-05-2021**	**Islamabad**
Issued on	Valid up to	Place of issue

Certification Expiry:

- Validity of regular certification is:

  Three (3) years from the time of issuance.

- Validity of provisional certification is:

  One (1) or two (2) years from the time of issuance.

Disclaimer

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PAE

Pakistan Academy of Engineering

(Registered under the Societies Act 1860)

Acad. Ingr. Lucio Caceres
President, CAETS

May 14, 2018

Subject: Statement of Intent regarding fulfilment of the relevant part of CAETS By-laws

Dear Mr. President

In pursuance of the discussion and agreement, arrived at the CAETS Assessment Meeting held on May 01 and 02, 2018 at the PAE head office, we are pleased to present our Statement of Intent in order to have an alignment with CAETS By-laws.

PAE will introduce the following Amendments in its By-laws:

1. **Amendment in the Article 4.2**

   There shall be upto twenty but not less than ten fellows. Subsequently, other fellows shall be elected by invitation only and not more than twenty-five each year from the nominations made by the Peer Committee constituted under Article 6.10.1. They will put up to the Council for Consideration and finally approved by the Assembly with three fourth majority of the fellows present in the Assembly. Total number of fellows shall not exceed one hundred at any time unless and otherwise decided by the Assembly with three fourth majority.

2. **Amendment in the Article 6.1**

   There shall be a Council consisting of, all the times, not less then 7 fellows including the President of the Academy. The Council shall comprise the following members:

• President of the Academy	-	Chairman
• One fellow to be nominated by the President	-	Vice Chairman
• Five fellows to be elected by the Assembly of the Academy (except foreign fellows) for a period of three years with an aggregate elected term of fifteen years.	-	Members
• Executive Secretary	-	Non-voting

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Website: http://www.pacadengg.org

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PAE

3. **Amendment in the Article 6.7.3.2**

   On vacation of the office of a Council member in consequence of happening of any of the above mentioned event, the Assembly shall re-elect another fellow as a member of the Council.

4. **Amendment in the Article 6.11.1.1**

   There shall be a President of the Academy to be elected by the Assembly for a period of three years with an aggregate elected term of fifteen years.

Under Article 11.0 the above noted amendments duly approved by the Assembly will be submitted to the Federal Board of Revenue and the Commissioner of Income Tax concerned for approval. Subsequently, the amendments will be submitted to the Provincial Assistant Registrar, Joint Stock Companies, Sindh, Karachi for registration.

We hope that the above Statement of Intent will satisfy CAETS to proceed with the regularisation of membership of the Pakistan Academy of Engineering.

The entire legislative process will take considerable time please.

Thanking you.

With profound regards,

Sincerely yours,

Dr.-Ing. Jameel Ahmad Khan
President
Pakistan Academy of Engineering
E-16/2, Block-7, Gulshan-e Iqbal
Karachi, Pakistan.
Cell: 0347-1803374
Tel.: 92-21-34831726
Fax: 92-21-34182105
E-mail: profjakhan@pacadengg.org

CC:

1. Dr. Ruth David, General Secretary, Treasurer, CAETS
2. Prof. Dr. Frank Behrendt, Member BoD, CAETS.

Resolution of the Amendments in the By-Laws of PAE passed in the Fifth (5th) PAE Annual Assembly Meeting held on August 04, 2018

After discussion, clarifications and approval by the Council of the proposed amendments in the By-Laws of PAE in order to have an alignment with CAETS and PCP, it was decided as follows:

Resolution No. AA-5.10

Resolved unanimously that the Assembly of PAE approves the Amendments in the By-Laws of PAE in response to the proposal submitted by Dr. Syed Muhammad Usman Ali and seconded by Dr. Muhammad Imran Aslam after the approval by the Council of PAE in response to the proposal submitted by Dr. Afzal Haque and seconded by Dr. Noorullah Soomro. The Amendments are enumerated as follows:

Amendments in the By-Laws of PAE

1. **Amendment in the Article 4.2**

   There shall be upto twenty but not less than ten fellows. Subsequently, other fellows shall be elected by invitation only and not more than twenty-five each year from the nominations made by the Peer Committee constituted under Article 6.10.1. They will put up to the Council for Consideration and finally approved by the Assembly with three fourth majority of the fellows present in the Assembly. Total number of fellows shall not exceed one hundred at any time unless and otherwise decided by the Assembly with three fourth majority.

2. **Amendment in the Article 6.1**

   There shall be a Council consisting of, all the times, not less then 7 fellows including the President of the Academy. The Council shall comprise the following members:

   - President of the Academy - Chairman
   - One fellow to be nominated by the President - Vice Chairman

- Five fellows to be elected by the Assembly of the Academy (except foreign fellows) for a period of three years with an aggregate elected term of fifteen years. - Members
- Executive Secretary - Non-voting

3. Amendment in the Article 6.7.3.2

On vacation of the office of a Council member in consequence of happening of any of the above mentioned event, the Assembly shall re-elect another fellow as a member of the Council.

4. Amendment in the Article 6.8.4.2

In persuance of the Income Tax Rules, 2002, Clause 213 (b), it is proposed to amend the Rule No. 6.8.4.2 of PAE By - Laws:

"Resolved that the Rule No. 6.8.4.2 of the Pakistan Academy of Engineering By - Laws is amended as follows:

Quorum of the meeting shall not be less than four or one third of the total number of the members, whichever is greater."

5. Amendment in the Article 6.11.1.1

There shall be a President of the Academy to be elected by the Assembly for a period of three years with an aggregate elected term of fifteen years.

6. Amendment in the Article 8.2.1

All money received by the Academy shall be deposited in the name of "PAKISTAN ACADEMY OF ENGINEERING" with any schedule bank of Pakistan provided the Council and authorised staff may keep a sum not exceeding **Rs.30,000/-** to meet day-to-day expenses

Under Article 11.0 the above noted amendments, duly approved by the Assembly of PAE will be submitted to the Federal Board of Revenue (FBR) and the Commissioner of Income Tax concerned for approval. Subsequently, the amendments will be submitted to the Provincial Assistant Registrar, Joint Stock Companies, Sindh, Karachi for registration.

CAETS Bylaws Section 4: Procedures for Admission of New Members

a. Applications for admission will normally be accepted for consideration no earlier than three ~~five~~ years after the official date of establishment of the applicant, with Council flexibility for up to five years in its discretion.

b. The election of a new member academy shall take place only during a regularly scheduled meeting of the Council when the Secretary/Treasurer receives completed application documents 90 days in advance of such meeting.

c. Admission of a new member academy shall require the affirmative votes of at least all but one of the members' representatives present and voting.

d. Applicants elected by the Council, on complying with Council-approved entry requirements, shall be admitted to CAETS effective at the conclusion of the Council meeting at which elected.

CAETS Operating Procedures (Amended June 2010)

1. Admission of New Member Academies to the Council

Further to CAETS Bylaws, Article 2 – Council Membership, Section 4 – Procedures for Admission of New Members, the following apply.

a. Applications for admission may be submitted to the Secretary/Treasurer and should present information that fully meets the items in Section 3 – Criteria for Membership.

b. A Visiting Committee, appointed by the Executive Committee, shall visit the applicant academy before consideration of the application by the Council and report its observations to the Council.

c. Council consideration of applications for membership shall take place only during a regularly scheduled Council meeting and only for those complete applications submitted to the Secretary/Treasurer at least 90 calendar day in advance of the meeting.

d. Applicants elected by the Council shall contribute $2,000 to the CAETS Reserve Fund within three months of election in order to be considered full members of CAETS.

4. Financial Issues

Further to CAETS Bylaws, Article 5 – Expenses, the following apply.

d. Member academies shall not pay dues for the fiscal year in which they were elected to membership.

Information provided by Andrew Cleland, Chief Executive, Royal Society Te Aparangi

Progress on key issues:

- Fellowship criteria were widened this year beyond distinction in research to allow cases for advancement of technology, although it will take some time to elect significant numbers of individuals with these qualifications.
- The second issue is the need for clear leadership for technology and engineering within the academy. The process is to recognize 6 distinct colleges within the academy with one covering the domain of Technology, Applied Science, and Engineering. There would then be a College chair who would sit with the other College chairs (humanities, social science, medical and health science, biological and environmental science, physical and mathematical science) on the governing body of the Academy. Each College chair would be charged with intellectual leadership within their domain and thus would have a clear leadership role

Timeline:

- Objective is to have revised Rules approved by March 2019 and the new structure in place by July 2019.

CAETS Bylaws require that for Membership Applications to be considered during an annual meeting they must be received by the CAETS Secretary at least 90 days prior to the meeting date (June 27, 2019); after receipt of the application the EXCOM would establish a Visiting Committee to perform on-site due diligence prior to the annual meeting to inform the Council vote.

This information was provided to Andrew so he is considering options to accelerate his application process and will equip Matt Wenham (Australia - ATSE) to provide a more complete report to the Council.

Per Marlene Kanga (WFEO President):

WFEO has a Strategic Plan – "WFEO Engineering 2030" to advance the UN SDGS through engineering and signed a declaration with UNESCO to this effect at its 50th anniversary celebrations in March 2018. I attach the Declaration. We also signed partnership agreement with five international engineering institutions in March and are moving forward with plans relating to engineering education and capacity building. I am happy to brief you on this, perhaps after your meeting in September. I met the incoming CAETS president from Sweden in London at the Royal Academy and hope to engage with her also.

WFEO is also proposing that UNESCO declare 4th March of each year (the founding day for WFEO), "World Engineering Day for Climate Change Action and Sustainability". We are seeking letters of support from engineering institutions, academies and universities from around the world. I would appreciate a letter from CAETS. I attach a draft letter which can be modified to suit. Please send the letter to the WFEO Secretariat s we are compiling these as part of the documents required by the UNESCO Executive Board.

Questions for CAETS:

1) Should we build cooperation with WFEO? If so, on what topics? Should this be considered by the SDG Discussion Group?
2) Should CAETS sign a letter supporting a UNESCO declaration for designation of March 4th (*founding day of WFEO*) as World Engineering Day for Climate Change and Sustainability?

World Federation of Engineering Organizations
Fédération Mondiale des Organisations d'Ingénieurs

United Nations
Educational, Scientific and
Cultural Organization

Paris Declaration

Advancing the United Nations Sustainable Development Goals through Engineering

SUSTAINABLE DEVELOPMENT GOALS

The World Federation of Engineering Organizations (WFEO) is the main body for engineering globally, representing nearly 100 nations and some 30 million engineers.

The members of WFEO are the national and regional professional engineering institutions of the world. WFEO is a member of the United Nations Scientific and Technological Community (UN STC) Major Group and has an official Associate status with UNESCO.

UNESCO, as the United Nations agency for education, science and culture, supports engineering through its Natural Sciences Sector, and acknowledges engineering as a powerful means to achieve sustainable development, capacity-building in engineering education and gender equality in developing countries, as well as the safeguarding of world heritage.

CELEBRATING 50 YEARS OF INTERNATIONAL ENGINEERING LEADERSHIP

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WFEO / FMOI

Paris Declaration - Advancing the United Nations Sustainable Development Goals through Engineering

United Nations Educational, Scientific and Cultural Organization

Considering that:

1. In September 2015, the United Nations General Assembly adopted its Resolution 70/1 announcing the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), which take an integrated approach to future development, combining progress in economic prosperity, social inclusion and environmental sustainability.

2. Engineers and engineering are critical for achieving the SDGs. Engineers have a key role in supporting the growth and development of essential infrastructures such as: roads, railways, bridges, dams, waste management, water supply and sanitation, energy and digital networks. They are responsible for developing and implementing technologies and systems that contribute towards achieving the SDGs as they relate to water, energy, environment, sustainable cities, natural disaster resilience and other areas, which will benefit people and the planet for greater prosperity and better quality of life.

3. WFEO is committed to playing a key role in leading and coordinating projects to achieve the SDGs through engineering. WFEO can bring together its members, educational institutions, government and industry to address the need for engineering capacity and the quality of engineers around the world and develop strategic frameworks and best practices for the implementation of engineering solutions for sustainable development. The national and regional members of WFEO, that are leading professional engineering institutions, will develop country and region-specific responses.

4. The celebration of WFEO's 50th anniversary in 2018 is a catalyst to develop a framework for an action plan for the engineering capacity that is required to achieve the SDGs. The Symposium held today, on 7th March 2018, is the first stage in bringing together the WFEO members and partners to develop the *WFEO Engineering 2030 Plan*.

Accordingly, we declare:

1. WFEO, a recognized member of the UN STC Major Group and UNESCO, through its Natural Sciences Sector, will work together and in cooperation with other UN organizations, including UNEP, UNFCCC and UNISDR towards achieving the SDGs through engineering.

2. WFEO and UNESCO are committed to the following principles for action through engineering to achieve the SDGs:

   a. Increase the numbers and quality of engineering graduates that meet the needs of sustainable development with rapidly changing technologies, in collaboration with educators, government and industry;

   b. Inform global standards for engineering education, support the development of a range of engineering education systems to comply with agreed standards and facilitate the mobility of engineers;

   c. Support capacity-building through strong institutions for engineering education and the development of accreditation bodies for the recognition of professional credentials;

   d. Establish policy frameworks and best practices, notably through WFEO Standing Technical Committees, as digital technologies, data sciences and artificial intelligence have ethical and social implications.

Signed in Paris, 7 March 2018

Marlene Kanga
President
World Federation of Engineering Organizations

a.i. Flavia Schlegel
Assistant Director-General for Natural Sciences
UNESCO

WORLD FEDERATION OF ENGINEERING ORGANIZATIONS
FÉDÉRATION MONDIALE DES ORGANISATIONS D'INGÉNIEURS

Proposal for the Proclamation of 4th March of each year as World Engineering Day for Climate Change Action and Sustainability

I. INTRODUCTION AND MOTIVATION

1. In September 2015, the United Nations General Assembly adopted its Resolution 70/1 announcing the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), which take an integrated approach to future development, combining progress in economic prosperity, social inclusion and environmental sustainability
2. Concerns about the impact of climate change have been expressed internationally, most importantly at the Paris Agreement at the 21st Conference of the Parties of the UNFCCC (COP21) in Paris in December 2015. The Agreement aims to respond to the global climate change threat by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Paragraphs 6.4-6.7 of the Agreement refer to the nexus between the need to contribute to the mitigation of greenhouse gases and support sustainable development.
3. Various UN agencies have expressed the need for urgent action on climate change including the Sendai Framework for Disaster Risk Reduction, the Convention on Biodiversity (CBD), the New Urban Agenda, the United Nations Convention to Combat Desertification, the Small Island Developing States Accelerated Modalities of Action (S.A.M.O.A.).
4. The UNESCO Science Commission and Social and Human Science Commission have both recommended urgent action on climate change (General Conference 2017: Resolution 4.9 and 6.2 and 39C/46 and 39C/73)
5. Engineers and engineering are crucial to address the risks of climate change and to ensure sustainable development.
    a. Engineers are essential for ***resilience to climate*** change and to design and develop resilient infrastructure that will withstand the increasing weather related events – floods, cyclones and bush fires especially in developing countries, Asia, Africa and Small Island Developing States (SIDS), that are most exposed to these risks;

    ;

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b. Engineers are needed to design and implement technologies that will achieve the targets set at COP21 for the reduction of greenhouse gas emissions

c. Engineers and engineering are essential to progress the UN Sustainable Development Goals as they relate to water, energy, environment, sustainable cities, natural disaster resilience and other areas;

d. Enhanced global awareness of, and increased education in the role of engineering in implementing advances in science into technologies to address the risks of climate change and the challenges of implementing technologies that reduce or eliminate greenhouse gas emissions and which enable sustainable development;

e. A focus on engineering will enable capacity building in developing countries, especially Africa and will also provide opportunities for inclusive access to engineering careers for women and girls.

6. The role of engineers and engineering will be widely recognised through the World Engineering Day for Climate Change Action and Sustainability. **It is proposed that this day be celebrated on 4th March, the anniversary of the founding day of the World Federation of Engineering Organisations (WFEO).**

II. THE IMPORTANCE OF ENGINEERING AND CLIMATE CHANGE ACTION FOR SUSTAINABILITY

7. The purpose of a World Engineering Day for Climate Change Action and Sustainability will be to provide an annual focal point for the continued appreciation of the importance of engineering to modern life and the central role of engineering in developing the technologies needed for climate change action as well as for sustainable development that will impact the lives of every citizen on earth – enabling social, cultural and economic activities in every field of human endeavour, including culture and art, education, sustainable development, and in diverse fields such as scientific research, medicine, information technology and communications and energy.

8. A World Engineering Day for Climate Change Action and Sustainability will be an opportunity ***to demonstrate the role of engineers and engineering, to develop solutions to climate change***,

9. A World Engineering Day for Climate Change Action and Sustainability will raise the profile of engineering and technology, and its role ***in improving the quality of life worldwide, and achieving the UN Sustainable Development Goals***.

10. A World Engineering Day for Climate Change Action and Sustainability will be an opportunity for dialogue between engineers and decision makers, industry leaders, scientists, non-governmental organizations and the public at large on issues relating to climate change and sustainable development. It will enable policies and solutions to address

the world's most pressing problems using engineering and will respond to the critical need for improved dialogue between citizens, engineers and policy-makers for climate change action.

11. A World Engineering Day for Climate Change Action and Sustainability will be an opportunity to demonstrate the importance of engineering in our modern world and to encourage, more young people, especially girls, to consider engineering as a career.

III POTENTIAL OUTCOMES OF WORLD ENGINEERING DAY

12. A World Engineering Day for Climate Change Action and Sustainability will see coordinated activities taking place worldwide, which will contribute to achieving numerous outcomes such as:

a. Highlight the achievements of engineers and engineering to our modern world and • improve public understanding of how engineering and technology is central to modern life, affecting the daily lives of every person on the planet and central to action on climate change and sustainable development;

b. Build awareness of the role of engineers in action for climate change including to reduce greenhouse gas emissions and build resilience against natural disasters caused by climate change;

c. Build worldwide educational capacity through activities targeted on engineering and technology, to encourage more young people to consider engineering as a career as it is vital that the brightest young minds be attracted to engineering to address the pressing problems of climate change and sustainable development;

d. Address the issues of gender balance in engineering which continues to be a gender segregated occupation while encouraging women and girls to consider the opportunities that engineering provides to create a better world;

e. Build capacity in engineering education and strong institutions for ensuring the standards of engineering education, with a focus in particular on developing countries and emerging economies;

f. Engage with government and industry to address the need for engineering capacity and the quality of engineers around the world and develop strategic frameworks and engineering institutions to deliver professional development and training;

g. Promote the importance of engineering innovation in developing new, advanced technologies in broad and inter-disciplinary areas to address action for climate change and sustainable development including renewable energy, integrated water management, artificial intelligence, big data and analytics, information and communication technologies and environmental technologies. Breakthroughs in these areas will have a significant

impact on addressing climate change, reduce greenhouse gas emissions and advance the goals of sustainable development;

h. Enhance international cooperation in research & development and education, by coordinating activities between learned societies, educational establishments and industry for better solutions for climate change and sustainable development;

i. Highlight the important role of engineering in millennia and the heritage engineering structures of ancient civilisations, many of which are recognised as UNESCO World Heritage Sites, that demonstrate the intimate link between engineering and the economic social and cultural development of societies and ensure the ongoing preservation of these important sites;

j. Celebrate the contributions of engineers across all continents and raise awareness of their contributions including important women engineers, especially those that have made significant contributions to developing technologies to address climate change and sustainable development.

IV. IMPORTANCE OF A WORLD ENGINEERING DAY FOR UNESCO

13. A World Engineering Day for Climate Change Action and Sustainability will provide UNESCO with an important opportunity to fulfil its mission of promoting international cooperation for addressing the key area of modern science as it relates to engineering for action against climate change and for sustainable development in both developed and developing countries**.**

14. A World Engineering Day for Climate Change Action and Sustainability will address the ***UNESCO 39 C/46 UNESCO Strategy for Action on Climate Change (2018-2021) and 39 C/73 Declaration of Ethical Principles in relation to Climate Change*** adopted at the UNESCO General Conference in November 2017, enabling Member States to take urgent action to combat climate change and its impacts through the promotion of the role of engineering in developing solutions to this important issue.

15. Additionally, it will enable Member States to meet their obligations under the COP 21 Paris Agreement, and in the overall context of the 2030 Agenda for Sustainable Development and its SDG 13 through technological interventions for national and local climate mitigation, adaptation and risk management, supported by climate change research, assessments and monitoring and collaboration and building institutional capacities in technology and engineering in these fields.

16. A World Engineering Day for Climate Change Action and Sustainability will enable especially strong focus on: (i) the advancement of science and technology for sustainable development; (ii) the promotion of UNESCO's Priorities for Africa (ii) the promotion of Education for All and Gender Equality; (iii) the focus on Youth and Education (iv) the mitigation and adaptation of climate change impacts on the Small Island Developing States.

17. A World Engineering Day for Climate Change Action and Sustainability will provides strong support for the UNESCO Strategy, ***Changing Minds, Not the Climate*** and support the objectives of education on climate change and communication on technological solutions for sustainable development.

18. A World Engineering Day for Climate Change Action and Sustainability will support important UNESCO programmes which address climate change and the World Engineering Day for Climate Change Action and Sustainability will enhance the effectiveness, visibility and implementation of the outcomes of its International Hydrological Programme (IHP), International Geoscience Programme (IGCP), Man and the Biosphere (MAB) Programme, Management of Social Transformations Programme (MOST), Local and Indigenous Knowledge Systems Programme (LINKS),the Communication and Information Sector and the Intergovernmental Oceanographic Commission (IOC)

19. UNESCO has played a crucial role in many areas of science and technology including the designation and planning of, among others, the International Year of Physics, the International Year of Astronomy, the International Year of Chemistry, the International Year of Crystallography, and International Year of Light and Light-based technologies and the forthcoming International Year of the Periodic Table in 2019. A World Engineering Day for Climate Change Action and Sustainability cuts across all these international celebrations and will demonstrate the application of science to implementable technologies and solutions for pressing contemporary problems thus ensuring that existing gains from these previous observances are effectively followed-up and strengthened.

V DELIVERING THE WORLD ENGINEERING DAY

20. The World Federation of Engineering Organizations (WFEO) is the peak body for engineering globally, representing nearly 100 nations and more than 30 million engineers. The members of WFEO are the main national and regional professional engineering institutions of the world. WFEO is a member of the United Nations Scientific and Technological Major Groups and has an official Associate status with UNESCO

21. WFEO is committed to playing a key role in leading and co-ordinating the celebration of the World Engineering Day for Climate Change Action and Sustainability.

    Under the leadership of WFEO in partnership with UNESCO, the World Engineering Day for Climate Change Action and Sustainability will bring together its members, partners, educational institutions and other NGOs, in more than 100 nations and directly involving their members, estimated at 30 million. However, with the multiplier effect of this level of advocacy, we estimate that awareness about engineering would be significantly higher.

22. WFEO will work with its partners with its global peers in engineering education, industry and women engineers, including the International Federation of Consulting Engineers (FIDIC), the International Federation of Engineering Educators (IFEES) and the Global Engineering Deans Coumcil (GEDC), the International Network of Women Engineers and Scientists (INWES) and the UNESCO centres in Asia and Africa to develop appropriate events to celebrations the World Engineering Day. This will enable a wide range of activities around the world, including: awareness-raising of the role and contribution of engineering for climate change action and sustainability, capacity-building, outreach to young people on engineering as a career and a wide range of humanitarian projects.

23. The national, regional and international members of WFEO, that are leading professional engineering institutions and learned societies in engineering, will develop country specific and region specific responses.

24. We anticipate that a World Engineering Day for Climate Change Action and Sustainability has the potential for highly significant impact and quantifiable outcomes, with an international audience reach that is estimated to be over 100 million.

World Engineering Day – Draft Support Letter

Date

Ms. Audrey Azoulay
Director General, UNESCO
7 Fontenoy Place
Paris, France

By Email to WFEO: executivedirector@wfeo.net

Support for Declaration of World Engineering Day for Climate Change Action and Sustainability

Dear Ms. Azoulay,

On behalf of the members of the xxxxxxxxx (Name of Institution), I am writing to indicate the strong support of our organisation for the ***Declaration of 4th March of each year as World Engineering Day for Climate Change Action and Sustainability.***

The (Name of the Institution) is the national/regional body for xxxxxxxxx (name Country or region) with responsibilities for ….(describe the scope and role of the organisation).

We directly or indirectly represent xxxxx (provide number) engineers.

If declared, our organisation commits to celebrating World Engineering Day with a wide range of activities that promote the role of engineering for climate change action and sustainability as urgent action is needed in these areas. Such celebrations will improve community recognition of the importance of engineering to society and the economy.

The activities to celebrate World Engineering Day is expected to encourage young people, girls and boys, to raise the number of people studying science and mathematics, increasing the intake of engineers into universities. This is critical for the sustainable development of our country.

We anticipate that our activities will reach and have an impact on xxxx million people in our country/region.

Yours sincerely,

Signed by the Chief Executive or President
Name of Institution