



1 & 2 October 2024
Menara Felda, Platinum Park KLCC

BEM CONVENTION 2024

GLOBALISING ENGINEERING OPPORTUNITIES

Presented by:

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Board Member, BEM

Chairman, Corporate Committee Committee

Deputy Chairman, Engineering Accreditation Council



Outline of Presentation



1. INTRODUCTION OF ENGINEERING TEAM

2. BEM - REGULATOR FOR ENGINEERING PRACTITIONERS

3. IEM – LEARNED ASSOCIATION FOR ENGINEERING PRACTITIONERS

4. INTERNATIONAL PROFESSIONAL AND COMPETENCY RECOGNITION

(I) INTERNATIONAL ENGINEERING ALLIANCE (IEA)

(II) IEA EDUCATIONAL ACCORDS

(III) IEA – APEC/ IntPE

(IV) IEA – IETA (Technologist)

(V) IEA – AIET (Technician)

5. ASEAN FEDERATION OF ENGINEERING ORGANISATION AND AER



ENGINEERING AND THE ENGINEERING TEAM

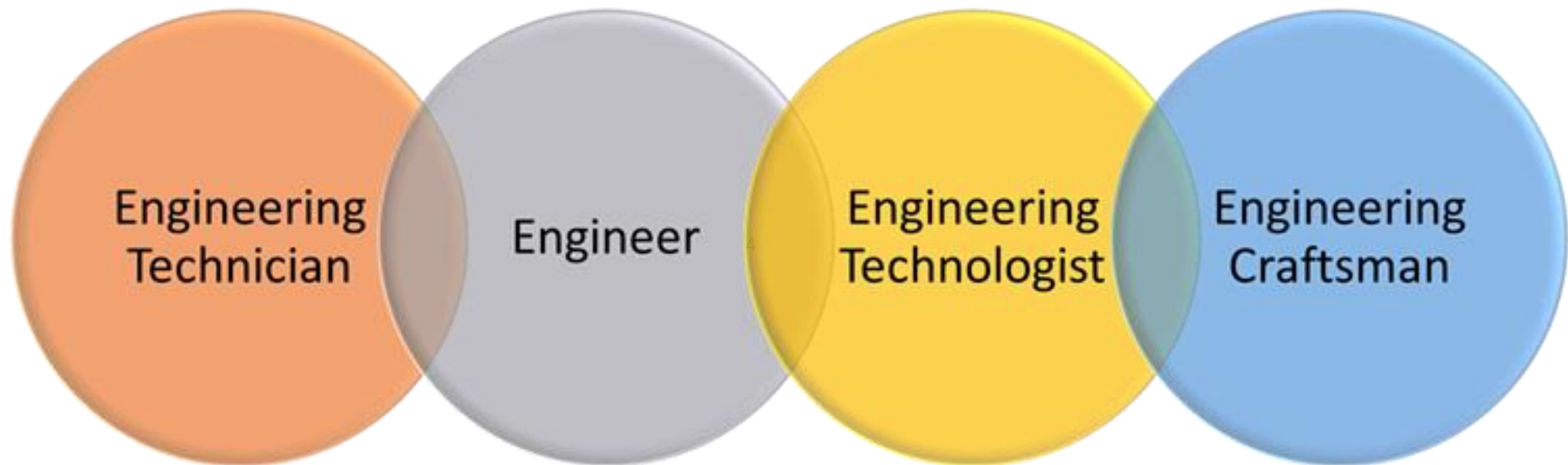
- Engineering works is defined as all works which include any publicly or privately owned public utilities, buildings, machines, equipment, processes, works or projects that require **the application of engineering principles and data** (REA).
- Many professionals are thus involved in engineering services or works namely **engineers, engineering technologists, engineering technicians and engineering craftsmen**. Without a strong engineering team many engineering services or engineering works would face difficulty to deliver quality services.





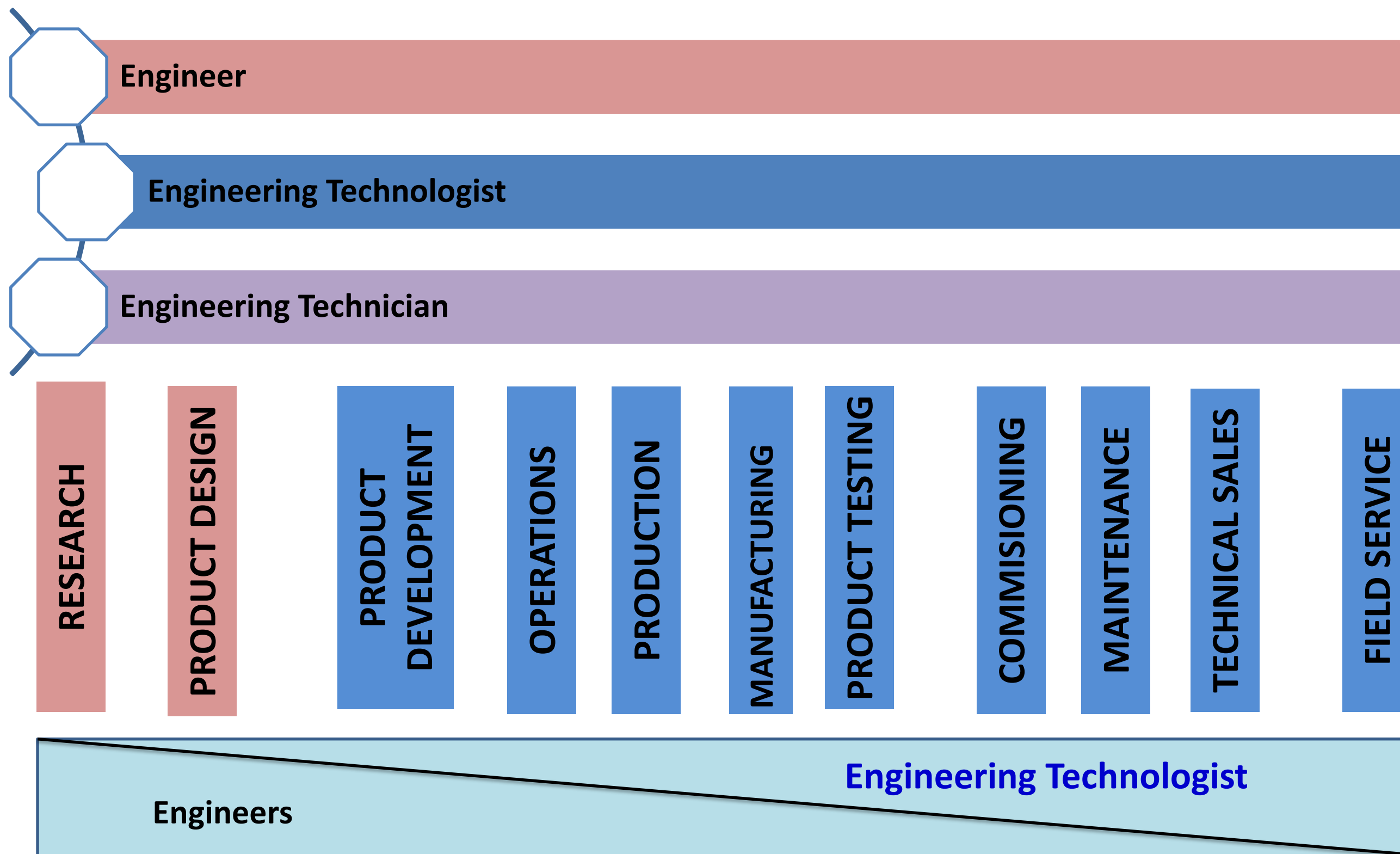
ENGINEERING AND THE ENGINEERING TEAM

The Engineering Team





Engineer, Engineering Technologist and Engineering Technician



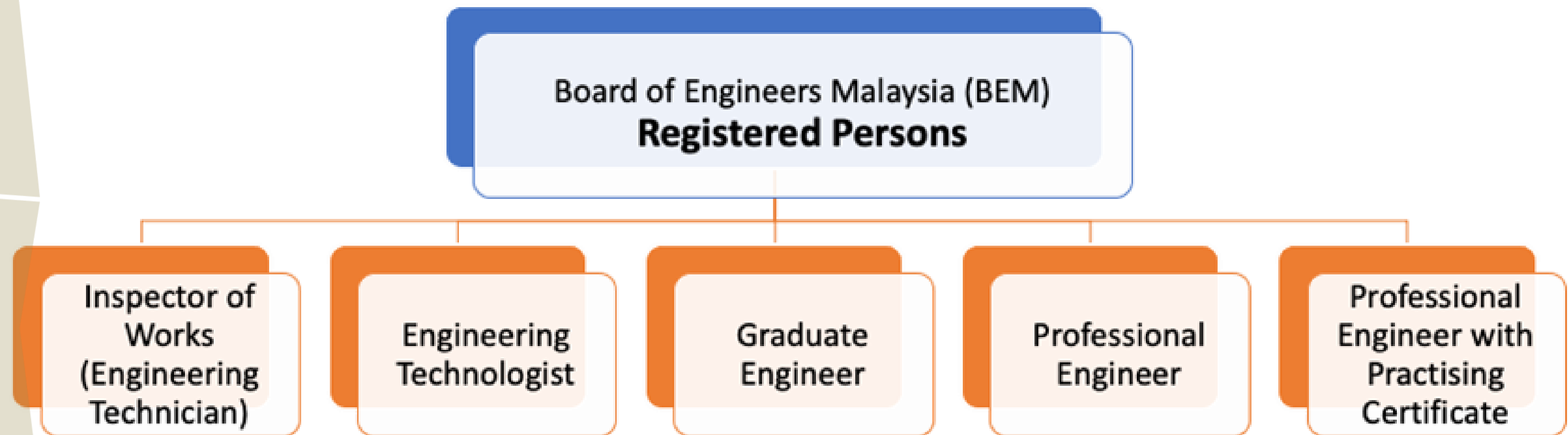


BOARD OF ENGINEERS MALAYSIA (BEM)

- ❑ The regulatory body for engineering practices in Malaysia; set-up by the Malaysian government under the Registration of Engineers Act, 1967 (REA) to administer and to enforce the REA and its provisions to protect public interest;
- ❑ Engineering practitioners **MUST** register with BEM if he/ she intends to practice engineering in Malaysia;
- ❑ Only Graduate Engineers, Engineering Technologist, Inspectors of Work and Professional Engineers registered with the Board of Engineers, Malaysia (BEM) are allowed to practice engineering in Malaysia



BOARD OF ENGINEERS MALAYSIA (BEM)





INSTITUTION OF ENGINEERS MALAYSIA (IEM)

- ❑ A learned society where engineers, engineering technologists and technicians of various disciplines in every sector of economic activities come together for mutual helpfulness and sharing of experiences and technologies;
- ❑ IEM works together with BEM to enhance the status of engineers in the society;
- ❑ Establish social linkage between engineering practitioners and help young engineering practitioners to establish themselves in their career;
- ❑ In general, a learned institution for engineering practitioners in Malaysia for networking, technical learning and socializing.



INSTITUTION OF ENGINEERS MALAYSIA (IEM)

Types of Membership within IEM

- ❑ Student Member – open to all engineering, engineering technologist and engineering diploma students;
- ❑ Associate Member – recognized diploma in engineering from a polytechnic/ college or has obtained equivalent qualification;
- ❑ Affiliate Member – graduate of Applied Science from recognized university/ college and is active in specialized engineering field;
- ❑ Incorporated Member – Engineering degree not listed in the institution's Accredited List;
- ❑ Graduate Member – graduates of accredited engineering and engineering technology degrees, engineering diplomas
- ❑ Engineering Technologist Member – upgrading of experienced engineering technologist graduate members;
- ❑ Engineering Technician Member – upgrading of experienced engineering technician graduate members;
- ❑ Senior Graduate Member – open to all practicing engineers “registered with BEM” who has no less than 8 years of experience;
- ❑ Member (MIEM) – upgrading of experienced engineers leading to Professional Engineer status;
- ❑ Senior Member – transfer from Member (MIEM) with not less than 15 years experience;
- ❑ Fellow Member – upgrading with not less than 5 years as MIEM;
- ❑ Honorary Member – distinguish person who contributed to engineering profession.

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INTERNATIONAL PROFESSIONAL AND COMPETENCY RECOGNITION





INTERNATIONAL ENGINEERING ALLIANCE

- International Engineering Alliance (IEA) - a global not-for-profit organization comprises members from **41 jurisdictions within 29 countries**, across seven international agreements.
- Through the Educational Accords and Competence Agreements, members of the International Engineering Alliance establish and enforce internationally bench-marked standards for engineering education and expected competence for engineering practice.
- These international agreements govern the recognition of engineering educational qualifications and professional competence.





INTERNATIONAL ENGINEERING ALLIANCE (IEA)



Educational Accords

- Washington Accord
- Sydney Accord
- Dublin Accord



Competence Agreements

- APEC Engineer
- International Professional Engineer
- International Engineering Technologist
- International Engineering Technician

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INTERNATIONAL ENGINEERING ALLIANCE

- Malaysia are signatories to the Washington, Sydney and Dublin Accords which falls under the umbrella of the International Engineering Alliance.
- Washington Accord was originally signed in 1989, and is a multi-lateral agreement between bodies responsible for accreditation of tertiary-level engineering qualifications within their jurisdictions, and with the objective to assist growing globalization of mutual recognition of engineering qualifications
- The Sydney and Dublin Accords were initiated to establish an international benchmarking for engineering technology qualifications at Bachelor and Diploma levels respectively.





INTERNATIONAL ENGINEERING ALLIANCE

- Signatories to the Accords (as of 2024)

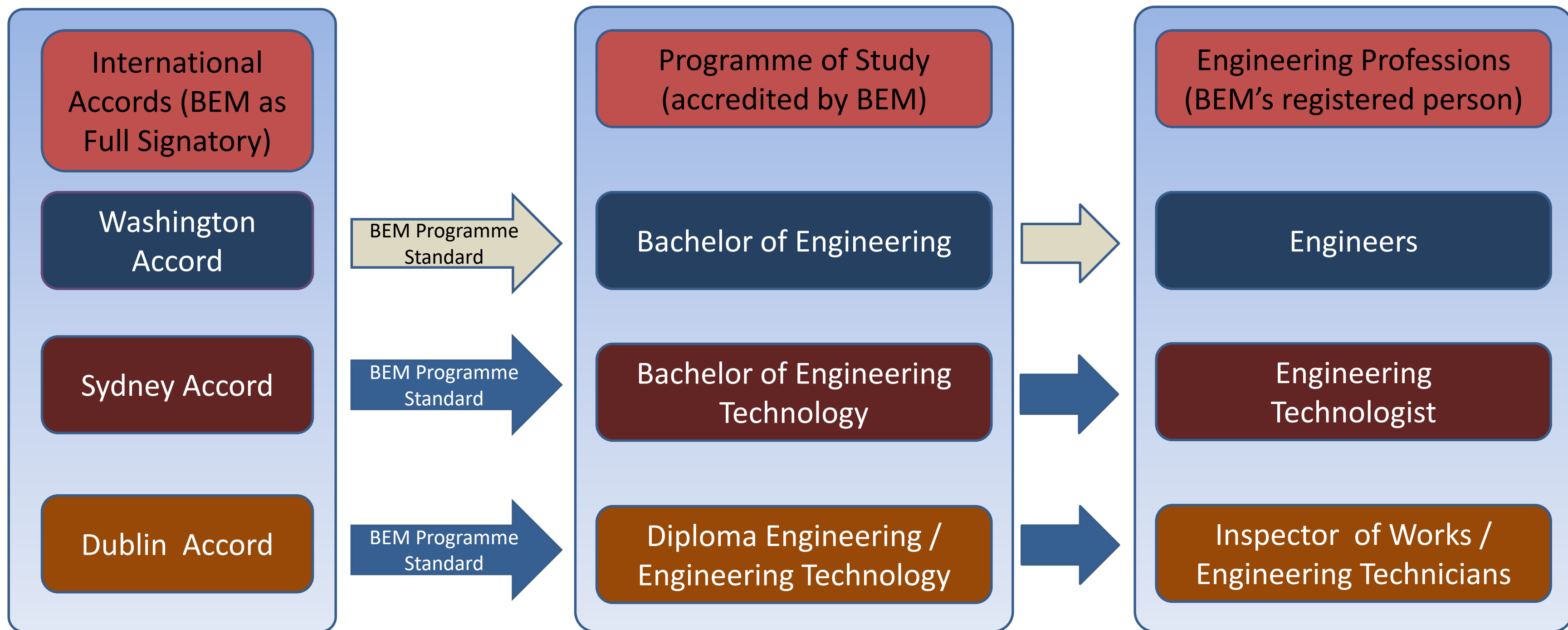
| Accord | Number of Signatories | Note - Full members |
|------------|---|---|
| Washington | <ul style="list-style-type: none">• 25 (full members)• 6 (provisional members) | Korea, Russia, Malaysia, China, SA, NZ, Australia, Canada, Ireland, Hong Kong China, Chinese Taipei, Singapore, Sri Lanka, Japan, India, US, Turkey, UK, Costa Rica, Pakistan, Indonesia, etc |
| Sydney | <ul style="list-style-type: none">• 11 (full members)• 2 (provisional members) | Australia, Canada, Chinese Taipei, Hong Kong China, Ireland, Korea, SA, UK, US, Malaysia, NZ |
| Dublin | <ul style="list-style-type: none">• 9 (full members) | Australia, Canada, Ireland, New Zealand, Korea, South Africa, UK, US, Malaysia |

- Benefits of signatory are that the programmes are recognized by other members of the international accords as 'substantially equivalent'. This makes it easier for **qualification holders to gain professional registration in other countries, enhancing internationally mobility and employment opportunities.**





INTERNATIONAL ENGINEERING ALLIANCE





ENGINEERING TECHNOLOGY vs ENGINEERING

DEPTH OF KNOWLEDGE REQUIRED

ENGINEERING

Washington Accord
Complex Problems

In-depth
knowledge that
allows a
fundamental-
based first
principles
analytical
approach

ENGINEERING TECHNOLOGY

Sydney Accord
Broadly Defined
Problems

Knowledge of
principles and
applied
procedures or
methodologies

Dublin Accord
Well defined
Problems

Solved using
limited
theoretical
knowledge, but
requires
extensive
practical
knowledge



International Professional & Competency Recognition

**INTERNATIONAL
REGISTERS OF ENGINEERING PRACTITIONERS
- APEC/IPEA**



INTERNATIONAL ENGINEERING ALLIANCE (IEA)



Educational Accords

- Washington Accord
- Sydney Accord
- Dublin Accord



Competence Agreements

- APEC Engineer
- International Professional Engineer
- International Engineering Technologist
- International Engineering Technician

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APEC/ IPEA International Registrars

APEC: Asia Pacific Economic Cooperation

The APEC Agreement recognizes the substantial equivalence of competence standards for professional engineers within the APEC economies

IPEA: International Professional Engineers Agreement

(formally known as Engineers Mobility Forum (EMF))

The IPEA recognizes the substantial¹⁹ equivalency of standards establishing the competency of professional engineers for independent practice





APEC/ IPEA International Registrars

DEFINITION

An **APEC Engineer** is defined as a person who is recognized as a Professional Engineer within an APEC Economy, and has satisfied an authorized body in that economy, and operating in accordance with the criteria and procedures approved by the APEC Engineer Coordinating Committee.

An **International Professional Engineer** is one whose experience is accepted as being eligible for ²⁰independent practice in another economy within which the full member countries/economies have standing





APEC/ IPEA International Registrars

OBJECTIVE OF THE REGISTERS:

Initiatives for trade liberalization in Professional Services;
Reduce barriers and ease the process for engineers to gain
access to work and practice in other economies.

Engineers in these registers shall have their competence
recognized by APEC and International member economies.





APEC/ IPEA International Registrars

TITLE

A registered APEC Engineer is entitled to use the post-nominal title **APEC Eng.** behind his/her name.

A registered International Professional Engineer in Malaysia is entitled to use the post-nominal title **IntPE (MY)** behind his/her name.

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APEC/ IPEA International Registrars

CRITERIA

The applicant must have:

- reached a level of academic achievement at the point of entry to the register - substantially equivalent to that of a graduate holding an engineering degree accredited by an organization holding full membership of, and acting in accordance with the terms of the Washington Accord;
- been assessed within their own economy as eligible for independent practice;
- gained a minimum of 7 years practical experience since graduation;
- spent at least 2 years in responsible charge of significant engineering work; and
- maintained their continuing professional development (CPD) at a satisfactory level.

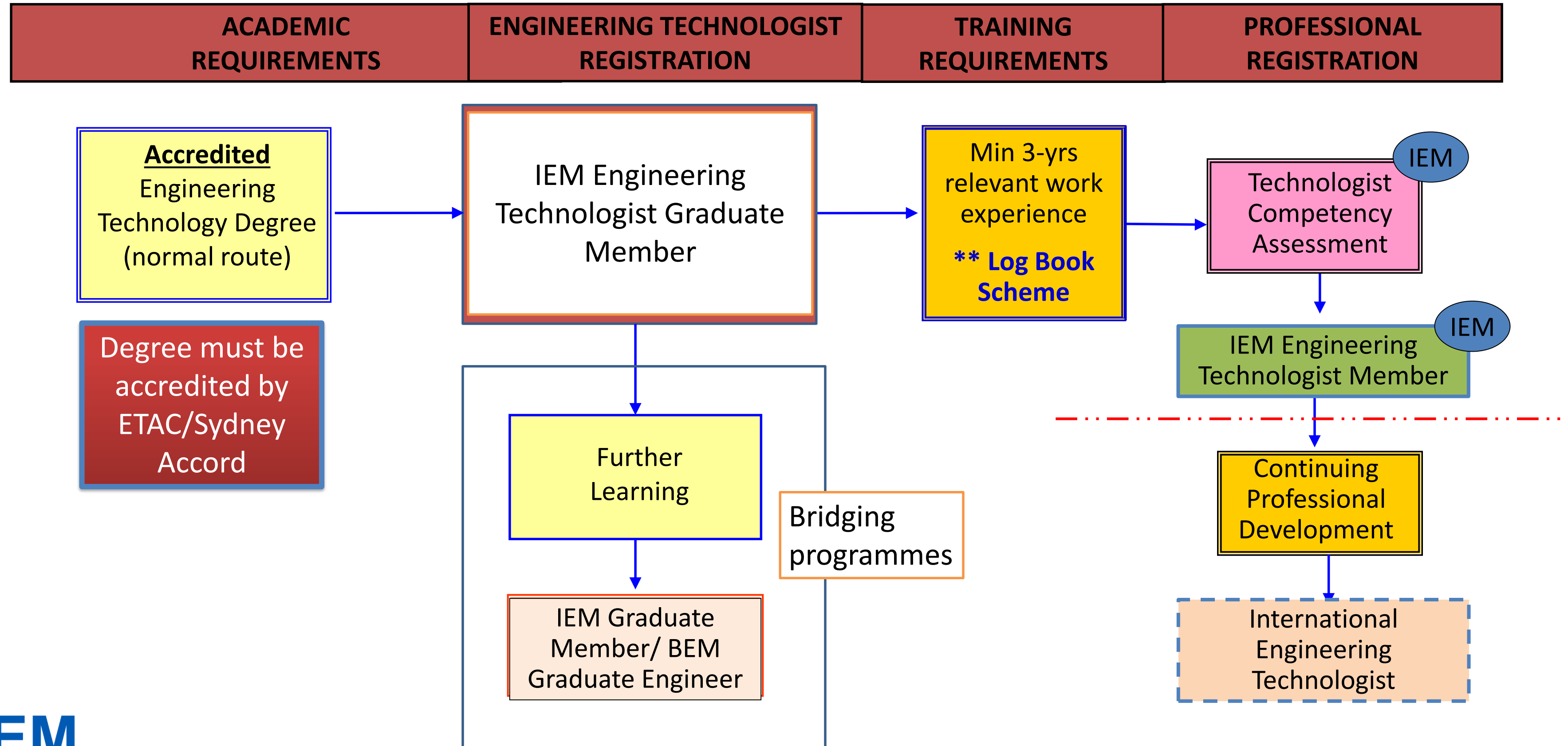




International Engineering Technologists Agreement

- The International Engineering Technologists Agreement (IETA) allows for the mutual recognition of the substantial equivalency of standards establishing the competency for practicing engineering technologists
- Through IETA, the members aim to facilitate cross-border practice by experienced practicing engineering technologists by establishing a framework for their recognition based on confidence in the integrity of national assessment systems, secured through continuing mutual inspection and evaluation of those systems ²⁴
- Malaysia, through IEM, has been accepted as the provisional member of IETA in 2021

Pathway to become IEM Engineering Technologist Member & International Engineering Technologist





Pathway to International Engineering Technologists

IEM Engineering Technologist Member (E.T.I.E.M.)

To be eligible for registration as International Engineering Technologist

Cumulative 7 years practical experience as an Engineering Technologist involving the application of engineering knowledge

Includes two years in responsible charge of significant engineering work, of which the applicant had been involved in:

- Planning, coordinating and executing a small project
- Undertook part of a larger project with sufficient understanding of the overall project

Maintaining sufficient CPD

INTERNATIONAL ENGINEERING TECHNOLOGISTS

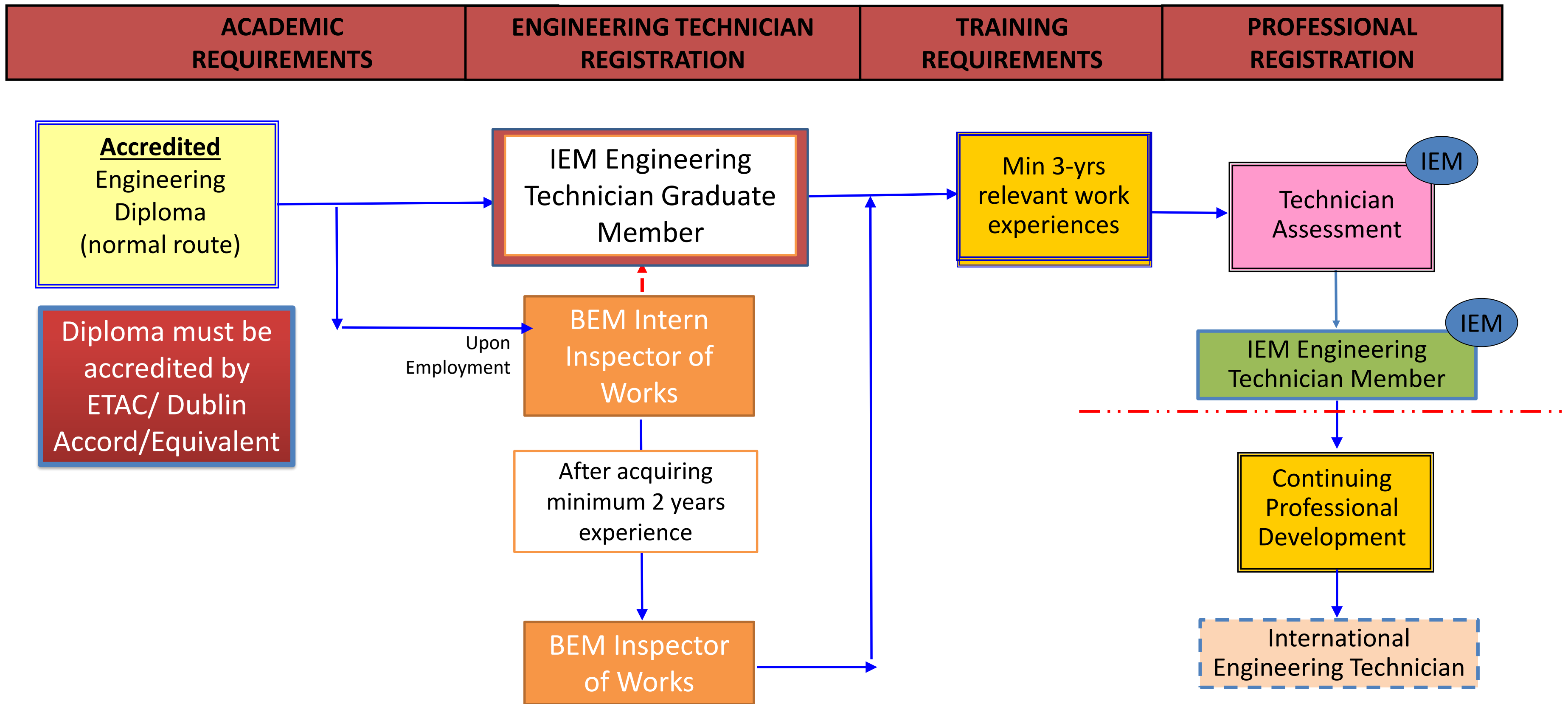
IntET (MY)



Agreement For International Engineering Technicians

- The Agreement For International Engineering Technicians establishes an international benchmark competence standard for individuals practicing as a fully qualified engineering technicians
- An agreement was signed in 2015 for International Engineering Technicians
- AIET recognizes that a practicing technician's skills have equivalence with other qualifications and provides a framework for the recognition of substantial equivalence²⁷ of standards and quality assurance systems
- Malaysia, through IEM, has been accepted as the provisional member of IETA in 2021

Pathway to become IEM Engineering Technician Member & International Engineering Technician





Pathway to International Engineering Technicians

IEM Engineering Technician Member (E.Tn.I.E.M.)

To be eligible for registration as
International Engineering Technician

Cumulative 5 years practical experience involving application of
engineering knowledge
Maintenance of CPD

INTERNATIONAL ENGINEERING TECHNICIAN



International Professional & Competency Recognition

INTERNATIONAL REGISTERS OF ENGINEERING PRACTITIONERS - ASEAN

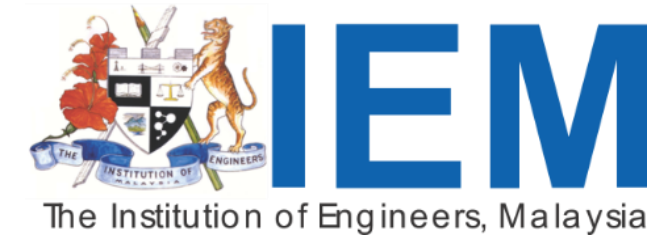


ASEAN CHARTERED PROFESSIONAL ENGINEER (ACPE)

- To facilitate mobility of professional engineering services, a register on ASEAN Chartered Professional Engineer is introduced
- Under the MRA, a professional engineer who holds the nationality of an ASEAN Member Country and possesses qualifications and experience that complies with the requirements in Part B³¹ of the Assessment Statement may apply to ASEAN Chartered Professional Engineers Register
- In Malaysia, a Professional Engineer could apply to be the ASEAN Chartered Professional Engineer through BEM



AFO & AER



- ☐ FACILITATE THE MOBILITY OF Engineers, Engineering Technologists and Engineering Technicians within the ASEAN Countries
- ☐ Similar to the EUROPEAN ENGINEER REGISTER (EURO Eng)

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Both are STAKEHOLDERS' INITIATIVES to recognise “COMPETENCY” and “BRANDING” of the engineering personnel



ASEAN Federation of Engineering Organisations



What is AFEO?

The ASEAN Federation of Engineering Organisations (AFEO) is a non-governmental body.

Its members are the engineering institutions and organisations of ASEAN countries with the following main objectives:

- **To promote goodwill and mutual understanding**
- **To establish and develop a ASEAN baseline standard for the engineering profession with the objective of facilitating the mobility of the engineers within the ASEAN countries.**

ASEAN
ENGINEERING
REGISTER





AER

OBJECTIVES

- To provide a complete data of engineering practitioners within ASEAN with the ultimate purpose of facilitating their mobility within the ASEAN ambit and to establish a framework of mutual recognition of qualifications in order to allow engineering practitioners who wish to practice outside their home country to carry with them a guarantee of ability.

- To provide sufficient data regarding the engineering practitioners for the benefit of prospective employers.

- To encourage a continuous updating on the quality of engineering practitioners by setting, monitoring and reviewing standards.

- To promote cultural and professional links among members of the engineering profession within ASEAN

- To enhance the wealth creation process of ASEAN countries.



Recognition and Mobility



The ASEAN Federation of Engineering Organisations (AFEEO) is formed by 10 ASEAN member organisations.



Pertubuhan Ukur Jurutera & Arkitek (PUJA)



Board of Engineers Cambodia (BEC)



Persatuan Insinyur Indonesia (PII)



Lao Union of Science and Engineering Associations (LUSEA)



The Institution of Engineers, Malaysia (IEM)



Myanmar Engineering Society (MES)



The Philippine Technological Council (PTC)



The Institution of Engineers Singapore (IES)

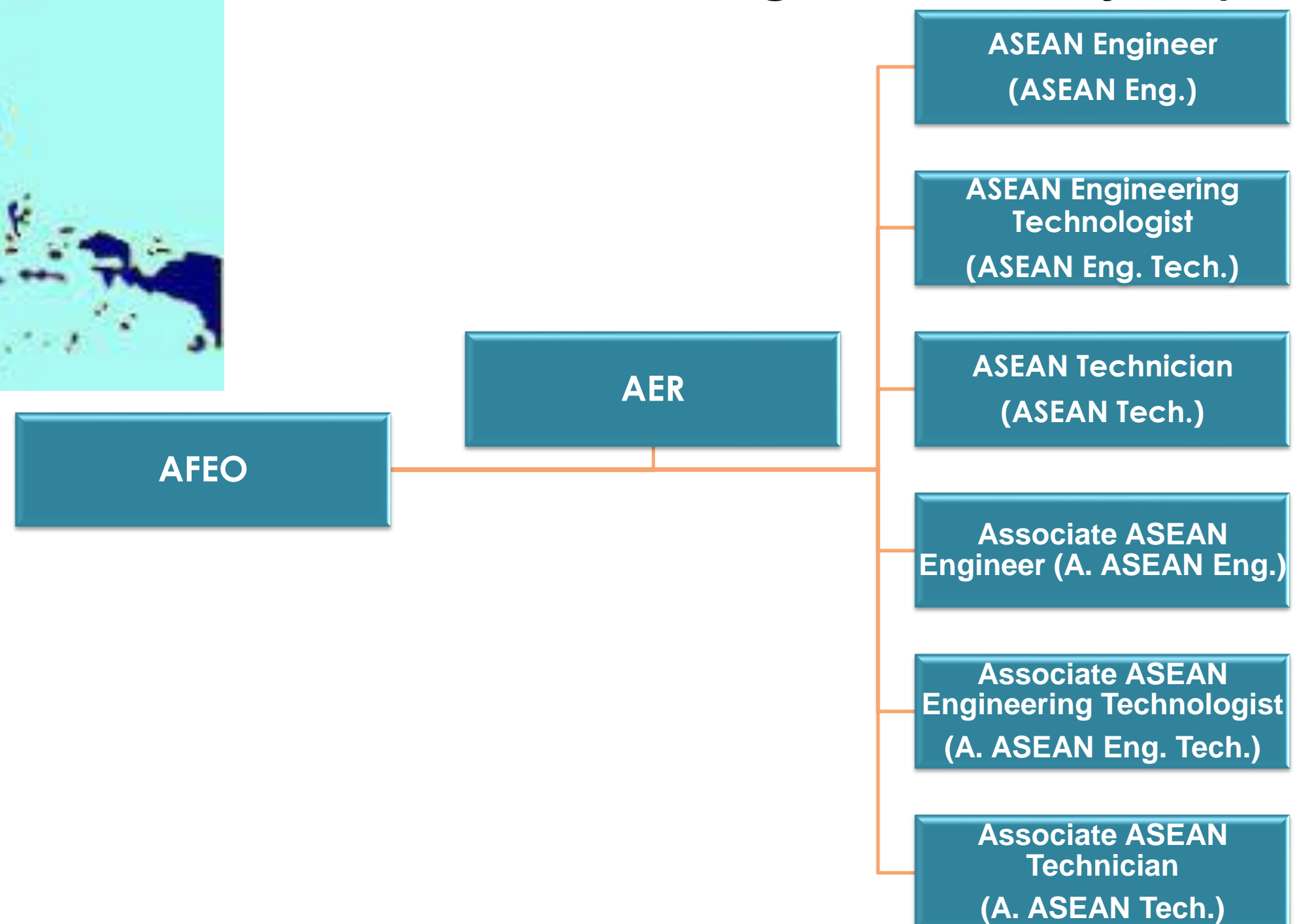


The Engineering Institute of Thailand (EIT)



Vietnam Union of Science and Technology Associations (VUSTA)

REGISTRATION WITH PROFESSIONAL INSTITUTION / SOCIETIES (AFEEO'S AER) In Malaysia- The Institution of Engineers Malaysia (IEM)





1

Bigger market for expertise



2

Better employment prospects



3

Greater avenue for
sharing of knowledge,
expertise and
technology



4

Increased related
business potential



5

Wider networking
and strategic alliances

Opportunities

TITLE

A registered ASEAN Engineer is entitled to use the post-nominal title **ASEAN Eng.** behind his/her name.

A registered ASEAN Engineering Technologist is entitled to use the post-nominal title **ASEAN Eng Technologist** behind his/her name.

A registered ASEAN Engineering Technologist is entitled to use the post-nominal title **ASEAN Eng Technician.** behind his/her name.



Samples of Medallions and Certificates

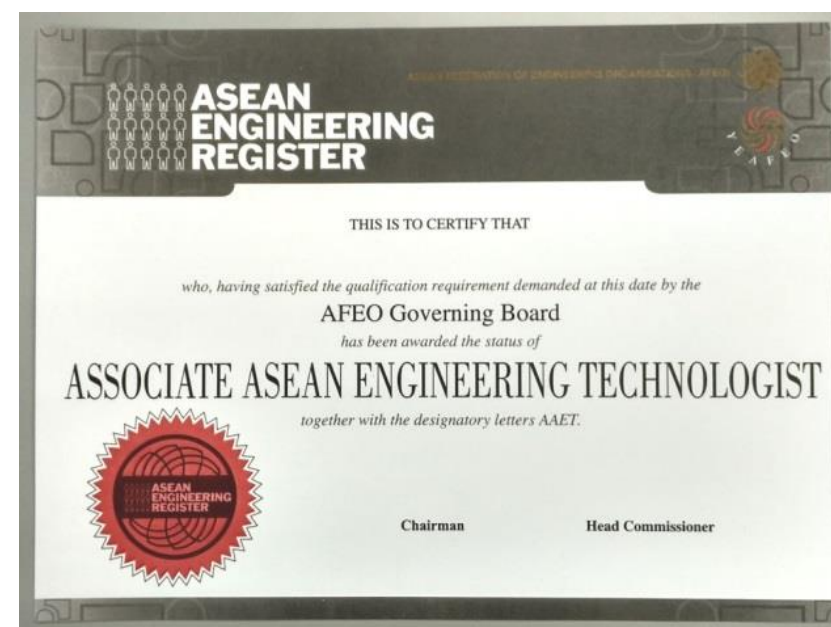
**ASEAN
ENGINEERING TECHNOLOGIST
Etching Medal (Chrome silver)**
Size: 2" Dia x 2mm(thk)
RM 12.00/pc (based on order quantity of 100pcs)



**ASEAN TECHNICIAN
Etching Medal (Chrome silver)**
Size: 2" Dia x 2mm(thk)
RM 12.00/pc (based on order quantity of 100pcs)



**ASSOCIATE ASEAN
ENGINEERING TECHNOLOGIST
Etching Medal (Chrome silver)**
Size: 1.5" Dia x 1.5mm(thk)
RM 10.00/pc (based on order quantity of 100pcs)



**ASSOCIATE ASEAN TECHNICIAN
Etching Medal (Chrome silver)**
Size: 1.5" Dia x 1.5mm(thk)
RM 10.00/pc (based on order quantity of 100pcs)





THANK YOU

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