INTERNATIONAL MOBILITY OF ENGINEERS

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with support from
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OUTLINE

- Importance of international mobility for engineers
- International agreements promoting mobility for engineers
- Australia and Malaysia experience
  - Multi-lateral Agreements
  - Bi-lateral Agreements

IMPORTANCE OF INTERNATIONAL MOBILITY

INTERNATIONAL EXPERIENCE, BENEFITS

- Individual
- Firms
- Economics

IMPORTANCE OF INTERNATIONAL MOBILITY

CONFIDENCE IN

- Abilities
- Standards
- Experiences

} of engineers working across international borders

IMPORTANCE OF INTERNATIONAL MOBILITY

- In practice, an idea for a structure, project or product may be
  - *conceived* by an engineer in one country
  - *designed* in one or more countries
  - *constructed* or produced with components from many countries
  - *operated* and *maintained* where used
  - *disposed* of with international support.

EXAMPLE

DELL COMPUTER CORPORATION

(HQ : TEXAS, USA)

400 companies in the supply chain for a computer company including China, Germany, India, Indonesia, Malaysia, Mexico, North America, South Korea, Taiwan and Thailand but with thirty key players around the world.

Eg. A custom-made laptop in Nashville, USA would be assembled in Penang, Malaysia with parts from up to 30 countries and will be delivered to the customers in four days.

INTERNATIONAL ARRANGEMENTS

Multilateral Agreements/ Understanding on Benchmarks

- Engineering education/ graduates – Washington Accord
- Independent practice of experienced engineers
  - ASEAN Engineers
  - APEC Engineers
  - EMF International Engineers
  - Euro Engineers

WASHINGTON ACCORD

- Substantial equivalence of education programmes

  → satisfying outcome of graduates for practice

WASHINGTON ACCORD

- Accreditation of ongoing education programmes
  - Criteria, policies, procedures etc
  - Recognition by registering/ licensing bodies of professional engineers

ASEAN ENGINEER REGISTER

http://www.aseanengineers.com/index.html

OBJECTIVES

- Comprehensive data base of ASEAN Engineers
- Continuous updating of engineering capabilities
- Promote cultural and professional links
- Harmonise the standard of engineering practice
- Gain international recognition to facilitate the mobility of ASEAN Engineers
- Enhancing the wealth of ASEAN Engineers

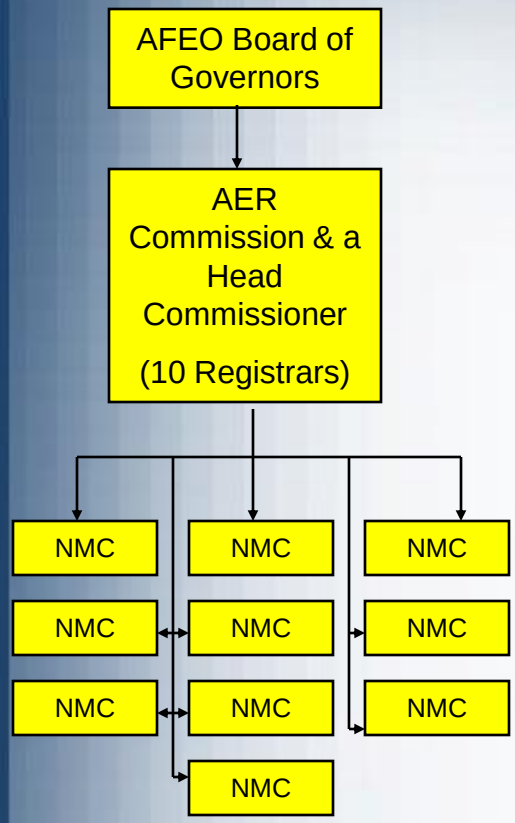
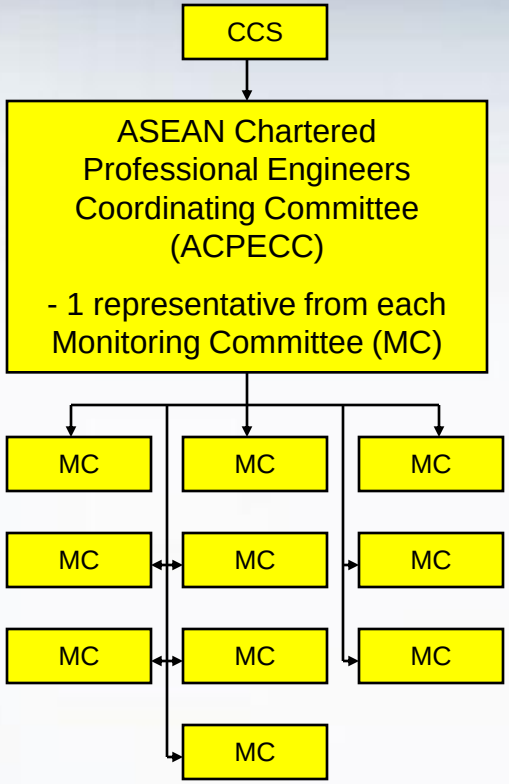
ASEAN ENGINEERS STATUS OF REGISTRATION (as at June 2007)

Brunei	0
Cambodia	203
Indonesia	164
Laos	28
Malaysia	652
Myanmar	146
Philippines	108
Singapore	23
Thailand	41
Vietnam	59
TOTAL	**1424**

ASEAN MRA ON ENGINEERING SERVICES

- APPROVED/ SIGNED IN DECEMBER 2005
- OBJECTIVES

  Enhance cooperation in engineering services of AFAS (Article VI – Recognition of Education and Experience)
  - Facilitate mobility of engineering services professionals
  - Exchange information in order to promote adoption of best practices on Standards and Qualifications

AER (Article 5)	MRA (Article 4.2)	REMARKS
		Structure for operation is similar. CCS could outsource AFEO to operationalise the registration of ACPE for immediate implementation. AER – One central register. MRA – Ten (10) register. One in each country.

APEC ENGINEER

- Operationalised in 2000
- Seven founding members : Australia, Canada, Hong Kong, Japan, Korea, Malaysia and New Zealand
- Today, more than 60% of the economies in APEC are members of APEC Engineers Register

APEC ENGINEER

PURPOSE

Provides mobility for engineers between the signatory economies of APEC (Asia Pacific Economic Cooperation)

APEC ENGINEER

CRITERIA

- Completion of an accredited or recognised engineering program
- Eligibility for independent practice within home economy
- Minimum of seven years practical experience since graduation
  - including at least two years of responsible charge of significant engineering work
- Continuing professional development at a satisfactory level

EMF INTERNATIONAL ENGINEERS REGISTER

- Operationalised in 2001
- Eleven founding members : Australia, Canada, Hong Kong China, Ireland, Japan, Korea, Malaysia, New Zealand, South Africa, United Kingdom, USA

EMF INTERNATIONAL ENGINEERS REGISTER

PURPOSE

To facilitate international mobility of experienced professional engineers 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

EMF INTERNATIONAL ENGINEERS REGISTER

CRITERIA

- Recognised Degree in Engineering substantially equivalent to a degree accredited by an organization holding full membership of, and acting in accordance with the terms of the Washington Accord
- Assessed in own economy as eligible for independent practice
- Minimum seven years practical experience since graduation, at least two years in responsible charge of significant engineering work
- Continual professional development at satisfactory level

CURRENT MEMBERSHIPS (as at July 2007)

COUNTRY	APEC ENGINEER	EMF INT. ENGINEER	WASHINGTON ACCORD
Australia	2000	2001	1989
Bangladesh		2003 (P)	
Canada	2000	2001	1989
Germany			2003 (P)
Hong Kong China	2000	2001	1995
India		2003 (P)	
Indonesia	2001		
Ireland		2001	1989
Japan	2000	2001	2005
Korea	2000	2001	2007
Malaysia	2000	2001	2003 (P)
New Zealand	2000	2001	1989
Philippines	2001		
Singapore	2005	2007	2006
Sri Lanka		2007	
South Africa		2001	1999
Chinese Taipei	2005		2007
Thailand	2003		
United Kingdom		2001	1989
USA	2001	2001	1989

OTHER AGREEMENTS

Bologna Accord

- 29 European Countries signed in June 1999 on Engineering Education

Eur Ing title

- Guarantee of competence for professional engineers, in order to:
  - facilitate the movement of practicing engineers within and outside the geographical area represented by FEANI's member countries
  - establish a framework of mutual recognition of qualifications in order to enable engineers practising outside their own country to carry a guarantee of competence
  - provide information about various systems of individual engineers for the benefit of prospective employers
  - encourage the continuous improvement of the quality of engineers by setting, monitoring and reviewing standards.

INTERNATIONAL ARRANGEMENTS & THEIR ACHIEVEMENTS

- Acceptance of new benchmark standards for engineers education and professional engineers
- High standard and improve consistency
- Encourage continuing convergence or harmonisation

ISSUES

SHORTAGE OF ENGINEERS/ MIGRATION

Citizenship

- Agreements will need to accepted specific citizenship requirements.
  - important that immigration is kept separate from the agreement
  - may influence mobility but must be seen as a separate issue.

ISSUES

FUTURE EDUCATION & TRAINING

- Four years post 12 years education
- Risk management, ethics on sustainability
- New source of managers and leaders for many organisations and professions

FUTURE OPTIONS

- Use AER Register and Refine to suit AFAS ASEAN MRA
- A WORLD ENGINEERING REGISTER that will facilitate the true international MOBILITY OF ENGINEERS
  - **both desirable and achievable.**

} recognised by WTO - GATS FTA (MRA)

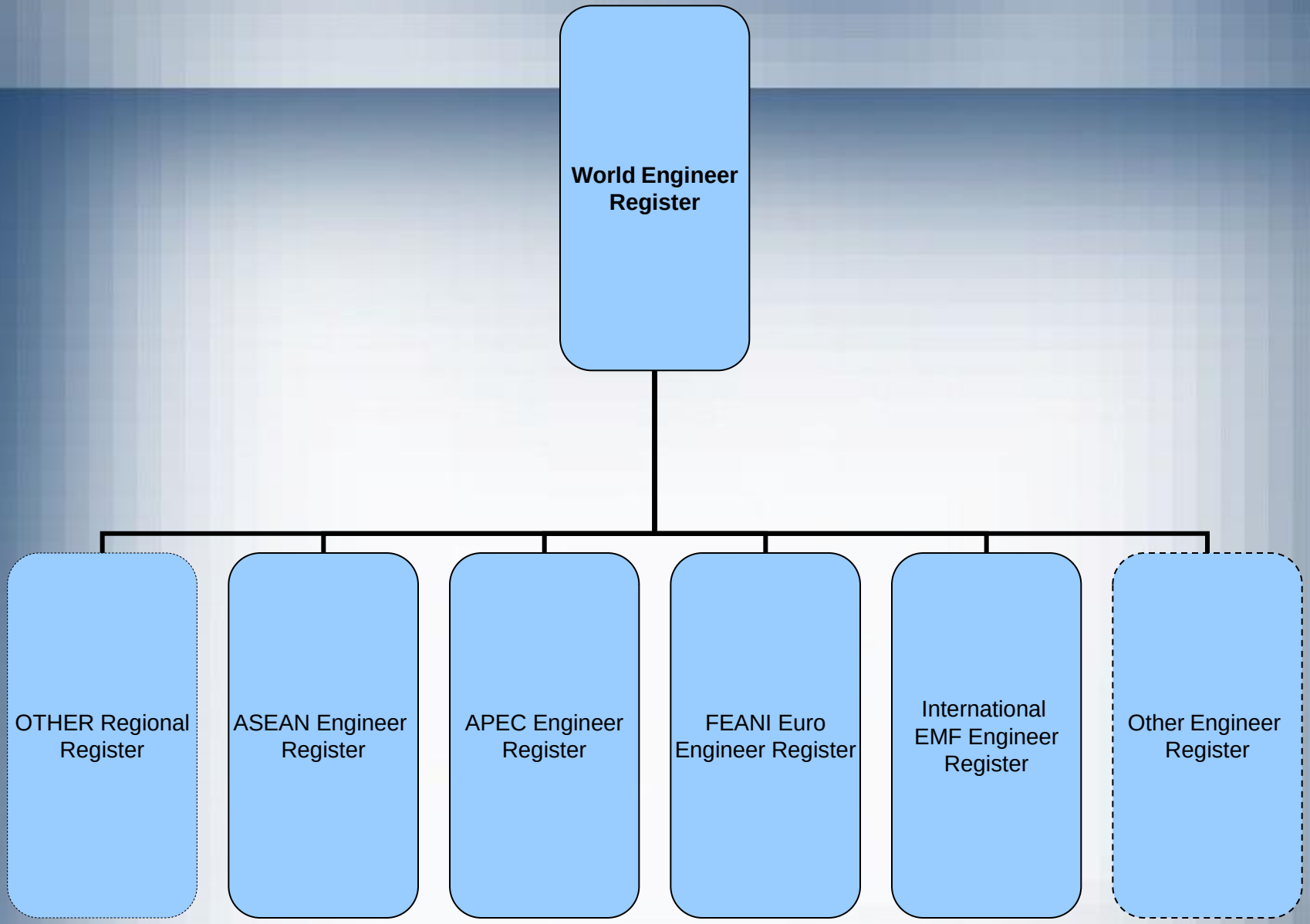
- In the meantime, need to build on the bilateral and regional agreements in place

BILATERAL AGREEMENTS

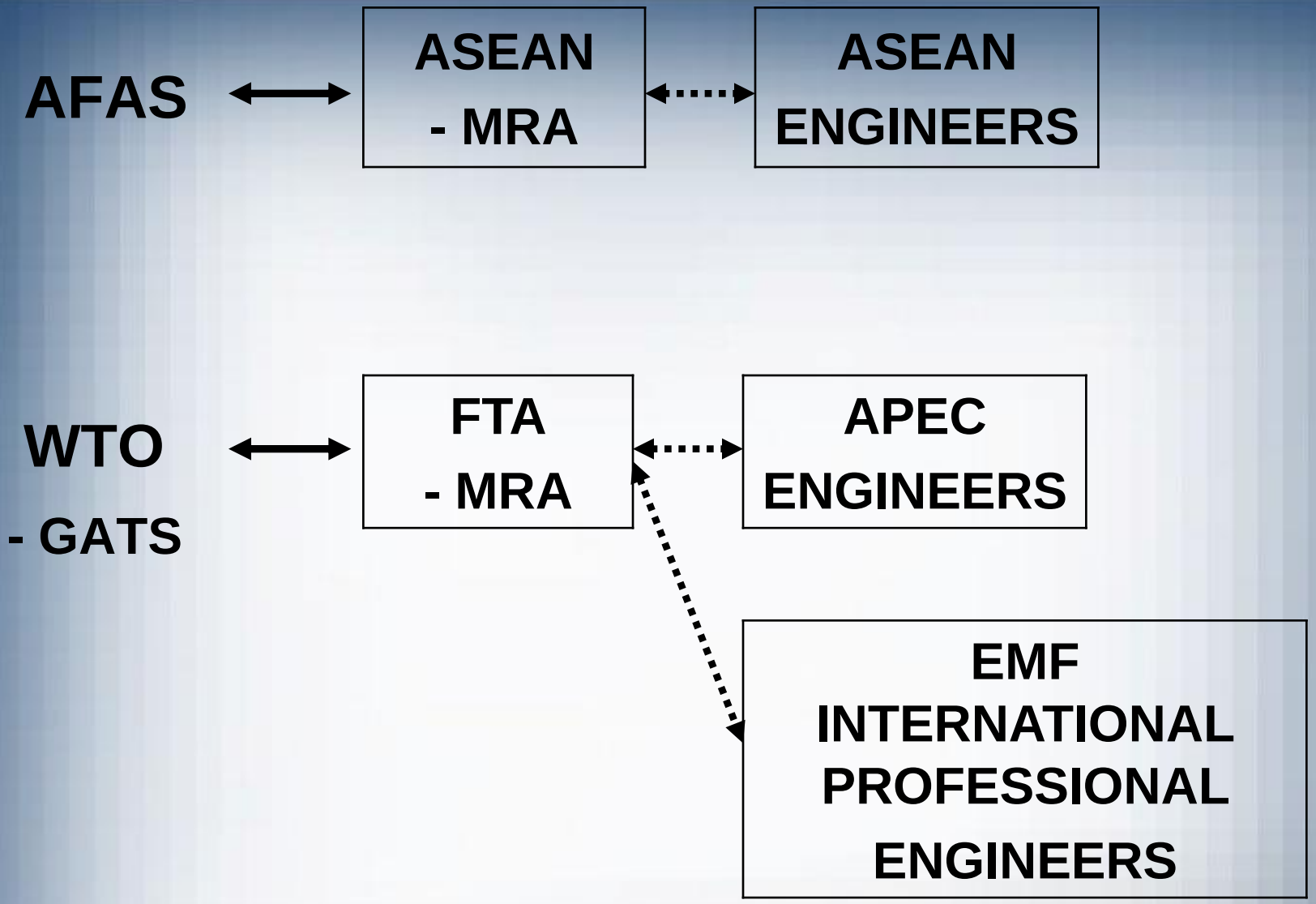
Examples :

- The Hong Kong Institution of Engineers & Canadian Council of Professional Engineers' (CCPE)
- Engineers Australia & The Institution of Engineers Malaysia (IEM)
- IPEJ (The Institution of Professional Engineers Japan) & MEXT (Ministry of Education, Culture, Sports, Science & Technology Japan AND

  Engineers Australia & Natural Engineering Registration Board.


World Engineer Register
OTHER Regional Register
ASEAN Engineer Register
APEC Engineer Register
FEANI Euro Engineer Register
International EMF Engineer Register
Other Engineer Register

MOBILITY THROUGH RECOGNITION



THANK YOU FOR YOUR ATTENTION