

New Developments at the International Engineering Alliance and within Asia

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Outline

- The International Engineering Alliance (IEA)
- The graduate attributes and professional competency
- Recent development in membership status, particularly in Asia
- Challenges ahead
- Issues under development in IEA
- Concluding Remarks

IEA Vision

To develop and maintain authoritative, independent international standards for engineering education and competence and promote their wider recognition and adoption

Brief History of the IEA

- 1989 Washington Accord founded (6 economies)
- 2001 Sydney Accord founded (7 economies)
- 2002 Dublin Accord founded (4 economies)
- 2004 Development of exemplar attributes and competencies commenced by the accords and agreements
- 2007 Common secretariat, MPA and governing group, rules and procedures, IEA name adopted
- 2013 24 nations, common standard framework and processes.

IEA Constituents

Constituents of IEA predominately consists:

- 1. national organizations solely responsible for accreditation of engineering programs in their economies, and**
- 2. national licensure bodies responsible for safe-guarding professional competence.**

IEA Core Values

- Uphold, assess and improve engineering educational standards and professional competence
- Best of engineering accreditation bodies from world economies
- Driven by the engineering profession
- Non governmental

International Engineering Alliance

Educational Accords

**Washington
Accord**

*Professional
Engineers*

**Sydney
Accord**

*Engineering
Technologists*

**Dublin
Accord**

*Engineering
Technicians*

Competence Recognition/Mobility Agreements

**International
Professional
Engineers
Agreement**

*Professional
Engineers*

**APEC
Engineers
Agreement**

*Professional
Engineers
(regional
agreement)*

**International
Engineering
Technologists
Agreement**

*Engineering
Technologists*

Technicians

Future possibility

<http://www.ieagreements.com>



Graduate Attributes

	WA Graduate (Professional)	SA Graduate (Technologist)	DA Graduate (Technician)
1. Engineering Knowledge			
2. Problem Analysis	Complex	Broadly defined	Well defined
3. Design/ development of solutions	Complex	Broadly defined	Well defined
4. Investigation	Complex	Broadly defined	Well defined
5. Modern Tool Usage	Complex	Broadly defined	Well defined
6. The Engineer and Society			
7. Environment and Sustainability			
8. Ethics			
9. Individual and Team work			
10. Communication	Complex	Broadly defined	Well defined
11. Project Management and Finance			
12. Life long learning			

<http://www.ieagreements.com/GradProfiles.cfm>



Professional Competency

- **An agreed educational base** - an Accord recognised degree, or equivalent, and
- **Experience after graduation** to develop both professional and personal maturity. For the IEA a minimum of seven years including two years responsible experience, and
- **Meeting an agreed competence** typically measured by evaluation against 13 elements

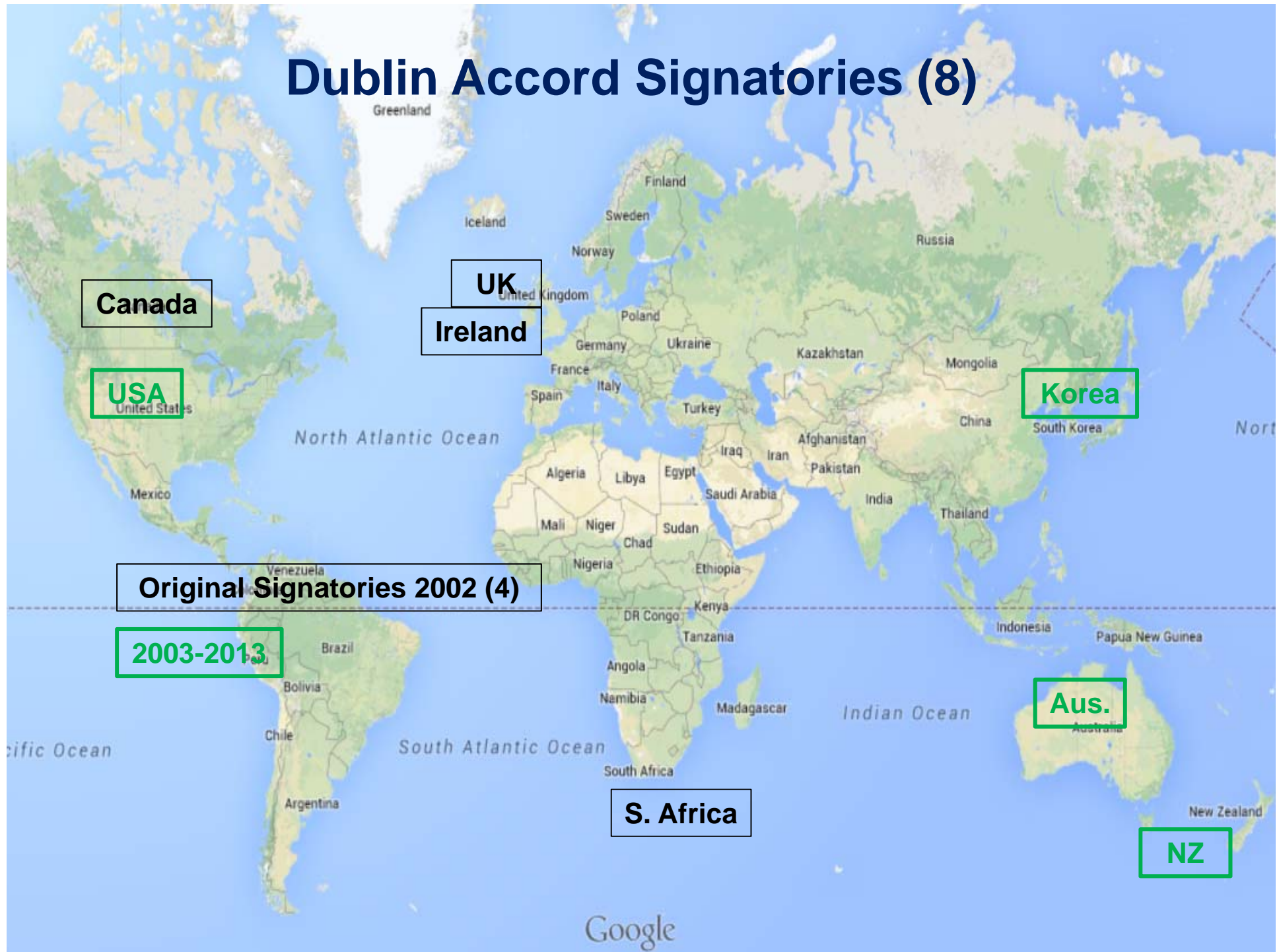
Washington Accord Signatories (15) and Provisional Signatories (6)



Sydney Accord Signatories (9) and Provisional Signatories (1)



Dublin Accord Signatories (8)



India

- **2007 - Accepted as Washington Accord provisional signatory**
- **Two tier system: Tier 1 (IIT and national universities) and Tier 2**
- **~ 1.5 million engineering students graduate per year, likely more than China and US combined.**

China

- **1994 - Pilot Accreditation**
- **2013 - Accepted as Washington Accord provisional signatory**
- **4.52 million total of 4-year engineering students**
- **1.2 million engineering students graduate per year**
- **31 engineering disciplines.**

Philippines

- **Long history of local accreditation (since 1957)**
- **2013 - Accepted as Washington Accord provisional signatory**
- **583 HEIs offering engineering programs**
- **1600+ engineering programs**
- **35,000+ engineering graduates in 2011.**

Challenges Ahead

- **Uphold the standards of the educational accords**
 - in large economies seeking to become signatories
 - with cultural understanding
- **Implement combine on-site reviews to cut cost, for example:**
 - Washington Accord with IPEA
 - Washington Accord with Sydney Accord
 - Sydney Accord with Dublin Accord

Issues under Development at IEA

- **Revisit IEA vision, purpose, relationship with outside organizations, governance**
- **Facilitating the development and ongoing refinement of a cohesive framework of good practice exemplars of engineering education and competence standards**
- **ENAAE / IEA collaboration**
- **Accord-wide recognition of accredited trans-national programs**
- **The future engineer ...**

Concluding Remarks

- **The IEA has contributed to improve outcomes-based engineering education**
- **Has assisted development of national educational and accreditation systems**
- **Is being embraced by various economies around the world**
- **Many challenges ahead still...**
- **Looking forward to working closely with our ENAEE colleagues.**

Acknowledgement

- **Basil Wakelin, IEA Chair**
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- **The IEA family collectively**