

WEEF2013
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Panel on
Accreditation and Quality in Engineering Education

Guest speakers:

- Michael K. J. Milligan, ABET – EE.UU

- Claudio Borri, SEFI – Europa

- **Michael Woonkyung Kim, ABEEK - Korea**

Moderator: Marco Sanjuán Mejía, Universidad del Norte

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I. Accreditation

1. Introduction to **ABEEK** (1)

HISTORY

[Has evolved to be the unique government-recognized accreditation agency for ee for Korea: 2013.1.7-2018.1.6]

- 1999. 8 Founding of **ABEEK**
- 1999. 8 Establishment of Engineering Accreditation Commission (EAC)
- 2000. 6 Recognition as a non-profit institution by the then Ministry of Education and Human Resources
- 2001. 1 Engineering Accreditation criteria (KEC2000)
- 2004. 7 Establishment of Computing Accreditation Commission (CAC)
- 2004. 12 Revised Engineering Accreditation Criteria (KEC2005) and Computing Accreditation Criteria (KCC2005)
- 2007. 6 Signatory of the Washington Accord
- 2008. 12 Signatory and Secretariat of the **Seoul Accord**
- 2009. 1 Establishment of Technology Accreditation Commission (TAC)
- 2009. 2 Engineering Technology Accreditation Criteria (KTC2009)
- 2009. 9 Pilot accreditation visits for TAC
- 2010. 5 Revised Computing Accreditation Criteria (KCC2010)
- 2013.1 Recognized by Ministry of Education to be sole engineering education accreditation body
- 2013. 6 Signatory of the Sydney/Dublin Accords
- 2013.6** Hosting of the IEA/**Seoul Accord** General Meetings in **Seoul**
- 2015 Anticipating KEC2015 (containing some significant revisions to KEC2005)

I. Accreditation

1. Introduction to **ABEEK** (2)

ABEEK AND THE KOREAN SOCIETY

To provide effective and timely accreditation, **ABEEK** maintains a close relationship with academic societies, government & public institutions, industry & profession, and providers of the tertiary education in engineering, computing and engineering technology across the country.



ABEEK MISSION

ABEEK, by promoting **innovation** and **quality assurance** of education in **engineering, computing and engineering technology**, will enhance the professional competencies of respective engineering professionals.

I. Accreditation

2. Introduction to the Seoul Accord

What/Why/How/Who/When/Where

A. What is the Seoul Accord?

Seoul Accord Governance Document (SAGD) states that:

“The **Seoul Accord** is a multi-lateral agreement among agencies responsible for accreditation or recognition of tertiary-level **Computing and IT-related** qualifications. These agencies have chosen to work collectively to assist the **mobility** of Computing and IT-related professionals holding suitable qualifications and to improve the quality of tertiary-level Computing and IT-related education. Membership (called being a *signatory*) is voluntary, but the signatories are committed to **development and recognition of good practice** in Computing and IT-related education. The number of signatories is expected to grow, and the activities of the Accord signatories are intended to assist growing **globalization of mutual recognition of Computing and IT-related qualifications**. However, it is acknowledged that there are other approaches by other multi-jurisdictional groupings. As the Accord signatories seek to work with other groupings and as Computing and IT-related disciplines evolve in accordance with technical, professional, and societal needs, the nature of the Accord could **evolve**. Hence the documents presented in this compendium could change in the future”

B. Why the Seoul Accord?

The **Seoul Accord**, formed in 2008 to serve **Computing and IT-related professionals**, endeavours to play a role similar to the following accreditation accords for general engineering professionals:

- The Washington Accord for professional engineers, 1989
- The Sydney Accord for engineering technologists, 2001
- The Dublin Accord for engineering technicians, 2002

C. How is the Seoul Accord Operated?

Committee	Chair:	Joe Turner (ABET)
	Deputy Chair:	Dong Yoon Kim (ABEEK)
Secretariat	Secretariat:	(IEET)

D. Who/When/Where of the Seoul Accord (1)

Signatories by Phase

–Founding Signatories

(since SAGM2008(Seoul), December 6, 2008):

- ABEEK (ROK)
- ABET, Inc. (USA)
- ACS (Australia)
- BCS (UK)
- CIPS (Canada)
- JABEE (Japan)

–Signatories

(since SAGM2009(Kyoto), June 20, 2009):

- HKIE (HK)
- IEET (Chinese Taipei)

D. Who/When/Where of the Seoul Accord (2)

Summary of Seoul Accord Milestones

- | | |
|--------------|--|
| • Nov. 2007: | Beginning of the Process for the Seoul Accord [Seoul Declaration] |
| • Jan. 2008: | Submission of WG Nominations |
| • Feb. 2008: | Adoption of Terms of Reference (TOR) |
| • June 2008: | Interim Meeting [Seoul Accord Interim Meeting] |
| • Dec. 2008: | The Launch Meeting of the Seoul Accord [SAGM2008(Seoul)] |
| • June 2009: | The Seoul Accord General Meeting [SAGM2009(Kyoto)] |
| • Sep. 2010: | The Seoul Accord Workshops [SAWS2010(Brisbane)] |
| • June 2011: | The Seoul Accord General Meeting [SAGM2011(Taipei)] |
| • June 2012: | The Seoul Accord Workshop and Special Meeting [SAWSM2012(Sydney)] |
| • June 2013: | The Seoul Accord General Meeting [SAGM2013(Seoul)] |

I. Accreditation

3. Role of **ABEEK** in the **Seoul Accord**

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1. List of **ABEEK's Seoul Accord** Secretariat Work (2008-2013)

1. Clerical Tasks

- Document Standardization
 - ✦ Adoption of Convention
 - ✦ Enforcement of Convention
 - ✦ Maintenance of Convention
- Archiving
 - ✦ Internet-Ready Electronic Platform
 - ✦ Categorization of Content
 - ✦ Document Maintenance
 - Quality Assurance
 - ✦ Consistency with Standards
- Financial Bookkeeping (for Signatoryship)

2. Cooperative/Coordinating Tasks

- Internet Presence
 - ✦ Notices and Relay of Information
 - ✦ SAGM/SAWS Coordination
- Agenda Preparation (printing of meeting brochure)
- Venue/Accommodation Coordination
- Banner
- Financial Analysis (for fees for SAGM/SAWS)
- Drafting of Minutes
- Recording of Proceedings (e.g. audio/video transcripts)
- Monitoring/Desktop Audit/WG-related Coordination
- Scheduling/Logistics
 - ✦ Coordination of Events
 - ✦ Enforcement of Time Table of Events

2. **ABEEK's Leadership Role** within the **Seoul Accord**

1. Macro Leadership

- Construction of Internet Platform
- Promotion/Participation in Leadership Position
 - ✦ Attendance at International Meetings and Workshops
 - IEA, WCC, NABEEA, SA
 - Visitations to and from ABET, Inc., e.t.c.
 - ✦ Contribution to the ABEEK/Seoul Accord English Brochures
 - ✦ Shaping of the SA (Work towards improving Computing and IT-related Education)
 - Pursuit of Support and Cooperation from Industry, Government, Research Institutions, Educational Institutions and CIT-related Organizations
 - Need for Realization of Importance of the Seoul Accord in the Global Context
 - Need for Quality Assurance of CIT Education

2. Micro Leadership

- Setting of Agenda
- Engraving of Plaques (to be given to signatories)
- Printing of Name Cards (to be given to Chair and General Secretariat)
- Preparation and Sending of Christmas Cards (for general distribution)
- Periodicals (SA Pamphlet)
 - ✦ Yearly Update
 - ✦ Printing
 - ✦ Disbursement at Various Meetings (domestic and international)

3. **ABEEK's Roles/Obligations as Seoul Accord Signatory**

1. Monitoring/Consulting Tasks

2. Working Groups

- Monitoring and Bi-Annual Reports
- Jurisdiction
- Listing of Accredited Programs

3. Construction of Internet Platform

4. Monitoring/Consulting Tasks

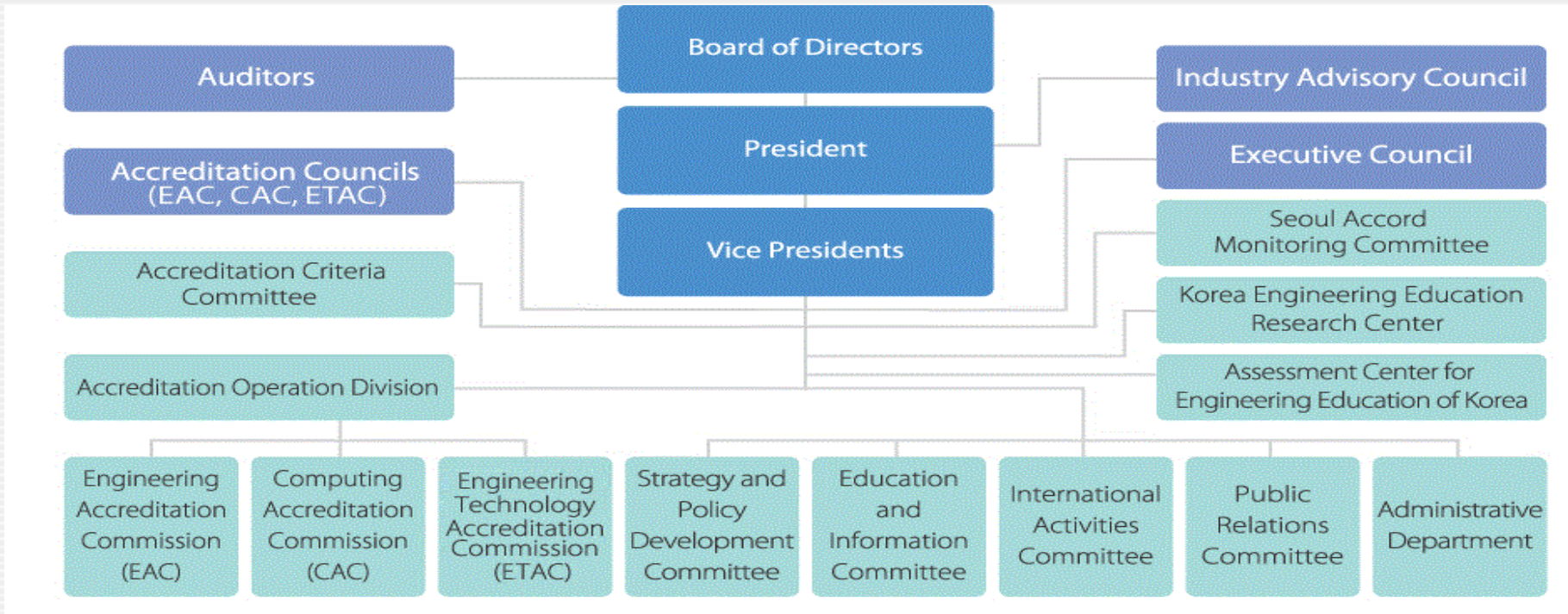
I. Accreditation

4. **ABEEK** in perspective (for this panel) (1)

Item	ABEEK	Miscellaneous
Origin of the initiative (government, academia, professional societies)	ABEEK, established in 1998, under initiatives of KSEE(Korean Society of Engineering Education; 1993)/DAECK(Deans Association for Engineering Colleges of Korea)/NAECK(National Academy of Engineering of Korea; 1996)	ABEEK is in cooperative relationship with the various sectors of the Korean government (especially the Ministry of Education from which it secured Recognition over 2013.1.17-2018.1.16)
Governance Structure	<see attached>	Similar to ABET
Structure of the accreditation processes (single set of criteria, different sets of criteria, commissions, articulated agencies)	EAC/CAC/ETAC (each with separate, but harmonized, accreditation criteria KEC2005/KCC2010/KTC2009)	Similar to ABET
Number of accredited programs	556(EAC)/49(CAC)/24(ETAC)	Number of programs as of 2011/2012/2012
Typical timeline from application to accreditation/authorization	<see attached>	Similar to ABET

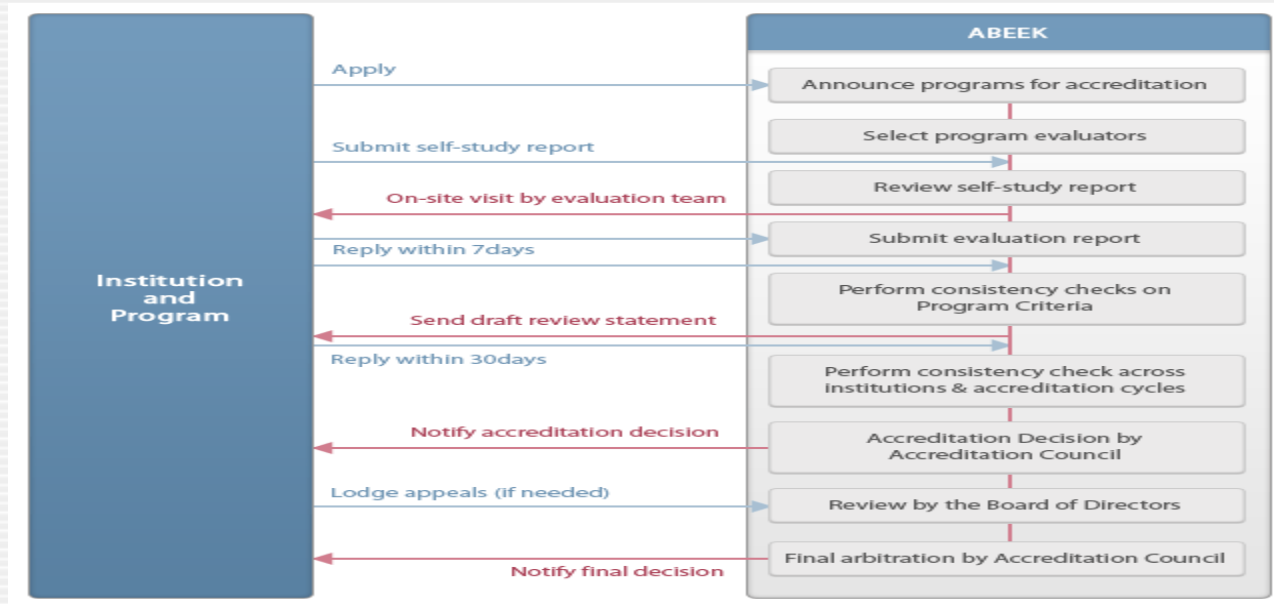
I. Accreditation

4. **ABEEK** in perspective (for this panel) (2) Governance Structure



I. Accreditation

4. **ABEEK** in perspective (for this panel) (3) Typical timeline from application to accreditation/authorization



II. Quality of Engineering Education

1. Role of Accreditation on Quality

A. Accreditation's impact on Quality

1. **(Phase I: Incubation Stage)** Promoting/establishing awareness for accreditation (minimum standards) and then strictly enforcing accreditation standards (KEC2000) improves the minimum (and therefore the average) quality
 1. -> establishment of anti-**ABEEK** sentiment
2. **(Phase II: Maturation Stage)** Affiliation with the international accords (Washington/**Seoul**/Sydney/Dublin Accords) promotes quality through:
 - Prolonged period of understanding/imitation/emulation of the leading accreditation bodies (KEC2005/KCC2005/KTC2009)
 - Attainment of credibility/rationale for the accreditation process
 - > Easing of resistance to **ABEEK**
3. **(Phase III: Leadership Stage)** Active participation in the international accords (e.g. Washington/**Seoul** Accords) and taking international leadership establishes credibility for:
 - further localization (e.g. KCC2010/KEC2015)
 - government-recognition -> public adoption of **ABEEK** as part of the EE improvement process

II. Quality of Engineering Education

1. Role of Accreditation on Quality

B. Accreditation's part in Innovation

1. **(Phase I: Incubation Stage)** Fitting of the international standards to Korea (KEC2000)
2. **(Phase II: Maturation Stage)** Localization /convergence of standards through CQI of accreditation criterias (KEC2005/KCC2005/KTC2009: Substantial Equivalency)
3. **(Phase III: Leadership Stage) (2008 -)**
 - Coupling of Innovation Centers and Seoul Accord Initiative (20 million USD/year) with accreditation -> Formations of Korea Engineering Research Center, Assessment Center for Engineering Education of Korea and Seoul Accord Korea Committee
 - Establishment/allowance for flexibility/creativity
 - Establishment of internalization
 - Institutionalization of accreditation within the EE hierarchy of Korea (Recognition by Ministry of Education 2013.1.17 – 2018.1.16)

II. Quality of Engineering Education

1. Role of Accreditation on Quality

C. Some Examples:

1. Accreditation and Quality Assurance culture in "top" schools/colleges and universities

1. **(Phase I: Incubation Stage)** Participation by most “top” educational providers
2. **(Phase II: Maturation Stage)** Withdrawal (by a significant number of) “top” educational providers/programs
3. **(Phase III: Leadership Stage) (2013 -)** Anticipated rejoining by “top” educational providers/programs (Ministry of Education recognition of **ABEEK** accreditation)

II. Quality of Engineering Education

1. Role of Accreditation on Quality

C. Some Examples:

2. Good and bad practices

1. Bad practices (WHO/WHEN/WHERE)

- Time-limiting constraints:
 - (2 +/-) mandatory military obligation for men
 - 135 +/- credit hours (45 courses -> 6 courses/semester) graduation requirements
- Spill-over ramifications of R&D drive (Brain Korea 21 Initiative)

2. Good practices (WHAT/WHY/HOW)

- Korean Diligence (culture)
- Introduction of competition/alternatives:
 - Influx of proven scientific practices
 - US/foreign-educated faculty (95%)
 - World Class University (WCU)
 - (Offshore) MOOC's
 - (Offshore) Internship programs
 - Government-spearheaded drive (e.g. Innovation Centers, WCU)
 - EE Portfolio Contests
- Industry/Academia/Research Institution/Government integration
 - Samsung Mobile Phone Departments in universities
 - Samsung /LG sponsorships (research grants)

II. Quality of Engineering Education

2. Strategies for Accreditation

A. To ensure long-term Quality

B. To effectively reach class-room teaching

1. Ministry of Education-led institution of EE infrastructure
 - BK 21 Plus **(B)**
 - Innovation Centers **(B)**
 - Recognition of **ABEEK**
2. Government funding
 - BK 21 Plus: (4 +/- billion USD)
 - NURI
 - WCU
 - ICEE
 - **Seoul Accord** Initiative (20 million USD)
 - Women in Engineering Program **(B)**
 - Hub Universities for Industrial Collaboration
 - Leaders in Industrial Collaborations
3. CQI on accreditation process/evaluation (**ABEEK**)
 - Evaluation: **(B)**
 - executive committee
 - **Assessment Center for Engineering Education of Korea**
 - **Korea Engineering Education Research Center**
 - **subcontracting of survey institutions**
 - (In the future) Active on-line presence of **ABEEK/KSEE** (disbursement of EE information) **(B)**
4. Leadership and active participation in Washington/**Seoul**/Sydney/Dublin Accords

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II. Quality of Engineering Education

3. **ABEEK** in perspective (for this panel)

ABEEK has fulfilled its **designated partial role** in an integrated infrastructure:

- Pluralistic (cultural/social) Background:
 - General historical respect for education
 - Korean Diligence
 - Unity among Koreans
 - K-12 process (foreign language, pluralistic curriculum)
 - Mandatory military service (for men)
- **Accreditation (ABEEK):**
 - PO's involving rigorous elements
 - PO's involving soft skills (such as familiarity with societies/world/foreign languages)
 - CQI -> internationalization/globalization
- Integrated EE infrastructure (government-led leadership)
- natural life-long learning:
 - competitive and unity-seeking Korean companies/institutions
 - Korean Diligence