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Engineering Program Accreditation in Latin America and the Caribbean

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Engineering Program Accreditation in Latin America and the Caribbean

Abstract

The International Engineering Accreditation Alliance (IEA) is formed by the signatories of the six international agreements governing mutual recognition of qualifications and professional competence of engineers. Washington Accord recognizes substantial equivalence in professional engineering degrees (normally a 4 years degree). The Sydney Accord recognizes substantial equivalence in engineering technology degrees (normally a 3 year). The Dublin Accord provides the same for engineering technician degree (normally 2 years). There are three other agreements that cover competence standards for individual practicing engineers (the APEC Engineer Agreement, the International Professional Engineers Agreement, and the International Engineering Technologist Agreement). This paper will focus on engineering program accreditation, not credentialing of individual engineers.

None of the engineering program accreditation agencies in Latin America and the Caribbean are members of the IEA. There are different strategies used to provide access to engineering program accreditation or quality assurance to universities in the Latin America and Caribbean. These are examined, and a summary of the state of engineering program accreditation in the region will be presented.

Introduction

Engineering program accreditation is the key to a global knowledge economy. Internationally recognized Engineering accreditation establishes programmatic and institutional optimization that provides quality assurance, internationally recognized standards, and a process of continuous improvement. This would bring internationalization to academia, which would in turn build capacity, foster development, enable mobility and move the countries to global competitiveness.

The International Engineering Accreditation Alliance (IEA) [1] groups the agencies that have become signatories of the six international mutual recognition agreements:

- *Washington Accord* for the substantial equivalence of professional engineering degrees (~4 year degree),
- *Sydney Accord* for the substantial equivalence of engineering technology degrees (~3 year degree), and
- *Dublin Accord* for the substantial equivalence of engineering technician degrees (~2 year degree).

Figure 1 shows the Signatories of these accords. Of particular importance is that no Latin American and Caribbean (LAC) country has signed the accords, and only one, from Peru, is a Provisional Signatory. This puts the LAC region in a serious disadvantage, as they need to go through another country's agency to attain substantial equivalence, and translate all accreditation documentation to a language other than their mother tongue. This results in a

more costly accreditation process, and much more effort required from the faculty and administration, yielding a slower process to attain substantial equivalence.

Table 1. Signatories and Provisional Signatories of the International Engineering Accreditation Alliance

Signatories:
Australia - Engineers Australia
Canada - Engineers Canada
Chinese Taipei - Institute of Engineering Education Taiwan
Hong Kong China - The Hong Kong Institution of Engineers
India - National Board of Accreditation
Ireland - Engineers Ireland
Japan - Japan Accreditation Board for Engineering Education
Korea - Accreditation Board for Engineering Education of Korea
Malaysia - Board of Engineers Malaysia
New Zealand - Institution of Professional Engineers NZ
Russia - Association for Engineering Education of Russia
Singapore - Institution of Engineers Singapore
South Africa - Engineering Council of South Africa
Sri Lanka - Institution of Engineers Sri Lanka
Turkey - MUDEK (*2011*)
United Kingdom - Engineering Council UK
United States - ABET

Provisional Signatories
Bangladesh - Board of Accreditation for Engineering and Technical Edu
China - China Association for Science and Technology
Pakistan - Pakistan Engineering Council
Peru - ICACIT
Philippines - Philippine Technological Council

The Ministers of the Science and Technology of the 34 countries members of the Organization of American States (OAS) developed an initiative called *Engineering for the Americas* and one of its first charges in 2005 was to develop a Greater Caribbean Region Engineering Accreditation System (GCREAS), which was funded by the Inter-American Development Bank (IDB), with the intent that the countries in this region would not have to translate their documentation, and that the GCREAS would eventually become a signatory of the IEA. The IDB also funded a second accreditation agency, ACAAI (for its acronym in Spanish: Agencia Centroamericana de Acreditación de Arquitectura e Ingenierías), for Central America. GCREAS was based on the ABET model, while ACAAI was based on the Engineers Canada model of accreditation. However, to this date, none have moved to become a Provisional Signatory.

In this paper we review different processes that LAC institutions are undergoing to attain international engineering program accreditation or substantial equivalence.

Regional vs. International Accreditation

LAC institutions need to determine whether they want to pursue regional accreditation, such as that provided by the countries of MercoSur (Argentina, Brazil, Paraguay, Uruguay, Venezuela, and associate countries: Chile, Bolivia, Colombia, Ecuador, Peru), or international accreditation. Regional accreditation brings the immediate benefit that the graduates of accredited programs can practice as professional engineers in the countries that compose the treaty. International accreditation does not bring this benefit, as the credential of the professional engineers is not under the realm of the accreditation agencies and requires treaties or agreements.

ABET began in 2007 to accredit international programs instead of granting substantial significant. Ten percent of the programs accredited by ABET are overseas programs. The Middle East requests the largest number of visits, followed by Latin America and Asia. ABET

requires the international program seeking ABET accreditation to coordinate the request with the in-country accrediting agency or overseeing body.

Licensure vs Accreditation

Since 2006 the National Council Examiners for Engineering and Surveying, charged with the Fundamentals in Engineering (FE) and Professional Engineers (PE) Exams that are part of credentialing Professional Engineers in the United States, have offered PE exams in Japan [2]. The NCEES has since signed agreements to offer FE and PE exams in Canada, Saudi Arabia, the united Arab Emirates, Egypt and Turkey; and are in the process of expanding it to countries in Asia and the Middle East. The PE credential is required by many international firms, for others is viewed as an honor or gold-standard. The International Professional Engineers Agreement (IPEA) developed an international standard of competence framework for professional engineering. Those that meet these international standards are credentialed as International Professional Engineer (IntPE), and are registered in the International Register of Professional Engineers (IRoPE). To qualify for a country's register, the engineer must hold a degree accredited or deemed substantially equivalent by a signatory of the Washington Accord, have completed seven years of practice (two in a position of responsibility), and maintain continuing professional development. Licensure in the United States requires, not only passing the PE exam, but additionally application through a State Board, many of which require state residency for licensure.

Several states, such as Oregon, Texas, North Carolina, Washington and Kentucky, which do not require a minimum 6 month residency for Professional Engineers licensure are allowing non-residents to take the PE Exam. Texas has signed agreements with Canada, Mexico and Australia to allow engineers licensed in these countries to apply for a temporary one-year license, renewable for total of three years, in Texas The United States National Society of Professional Engineers (NSPE) has signed agreements with the Japan Society of Professional Engineers, the Society of Professional Engineers in the UK, and the Korean Professional Engineers Association to encourage eligible members (graduates of ABET-accredited or ABET-equivalent programs and those licensed in the U.S. or these countries) to become NSPE members.

Accredited or Substantial Equivalence Programs in Latin America and the Caribbean

Table 1 summarizes a listing of the accredited engineering programs (or deemed substantially equivalent) in Latin America and the Caribbean compiled using the search engines of the different accrediting agencies. As seen from the table, only 9 Latin American and Caribbean countries (Chile, Colombia, Costa Rica, Ecuador, Jamaica, Mexico, Peru, Puerto Rico, and Trinidad Tobago) have sought international accreditation or equivalence. The first accredited program was in Puerto Rico in 1960. This past year, Ecuador accredited its first programs. The majority of programs choose ABET for accreditation. Central America seeks accreditation from the Engineers Canada´s Canadian Engineering Accreditation Board (CEAB). English-speaking Caribbean selected Engineering Council UK (UK-EC).

Table 1. Accreditation and Substantial Equivalence in Latin America and the Caribbean

COUNTRY	AGENCY	UNIVERSITY	PROGRAMS	YEAR ACC
Chile	ABET	Pontificia Universidad Católica de Chile	C.Eng., Chemical Engineering	2007
			C.Eng., Civil Engineering	2007
			C.Eng., Computer Engineering	2007
			C.Eng., Electrical Engineering	2007
			C.Eng., Mechanical Engineering	2007
Colombia	ABET	EAN University	BS, Manufacturing Engineering	2010
Colombia	ABET	Universidad de Los Andes	BS, Chemical Engineering	2010
			BS, Civil Engineering	2010
			BS, Electrical Engineering	2010
			BS, Electronic Engineering	2010
			BS, Environmental Engineering	2010
			BS, Industrial Engineering	2010
			BS, Mechanical Engineering	2010
			BS, Systems and Computer Engineering	2010
Colombia	ABET	Universidad del Norte	BSCE, Civil Engineering	2008
			BSEE, Electrical Engineering	2008
			BSELE, Electronics Engineering	2008
			BSIE, Industrial Engineering	2008
			BSME, Mechanical Engineering	2008
			BSSE, Systems Engineering	2008
Costa Rica	CEAB	Instituto Tecnológico de Costa Rica	BS, Agricultural Engineering	2013
			BS, Construction Engineering	2001
			BS, Electronic Engineering	2004
			BS, Industrial Maintenance Eng.	2001
			BS, Industrial Production Engineering	2004
			BS, Materials Engineering	2010
Costa Rica	CEAB	Universidad de Costa Rica	BS, Chemical Engineering	2014
			BS, Civil Engineering	1999
			BS, Electrical Engineering	2000
			BS, Industrial Engineering	2000
			BS, Mechanical Engineering	2008
Ecuador	ABET	Escuela Superior Politécnica del Litoral	BS, Computer Science	2012
			B.Eng., Mechanical Engineering	2012
Jamaica	UK-EC	University of Technology	BEng, Electrical Engineering	2007
			BEng, Mechanical Engineering	2007
Mexico	ABET	Autonomous University of Aguascalientes	BS, Civil Engineering	2008
			BSEE, Electronics Engineering	2008
Mexico	ABET	Instituto Tecnológico Autónomo de Mexico	BS, Computer Engineering	2009
			BS, Industrial Engineering	2009
Mexico	ABET	Instituto Tecnológico de Aguascalientes	B.Eng., Electrical Engineering	2012
			B.Eng., Electronics Engineering	2012
			B.Eng., Industrial Engineering	2012
			B.Eng., Mechanical Engineering	2012
Mexico	ABET	Instituto Tecnológico de Estudios Superiores de Monterrey, Campus San Luis Potosí	BS, Industrial Eng. minor Systems Eng.	2008
Mexico	ABET	Instituto Tecnológico de Estudios Superiores de Monterrey, Campus Chihuahua	BS, Industrial Eng. minor Systems Eng.	2007
			BS, Mechatronics Engineering	2009
Mexico	ABET	Instituto Tecnológico de Estudios Superiores de Monterrey, Campus Estado de Mexico	BS, Industrial Eng. minor Systems Eng.	2007
			BS, Mechanical Engineering OptA	2007
			BS, Mechanical Engineering OptE	2007
			BS, Mechanical Engineering	2007
Mexico	ABET	Instituto Tecnológico de Estudios Superiores de Monterrey, Campus Monterrey	BS, Chemical Eng. OptA	2006
			BS, Chemical Eng. OptS	2006
			BS, Civil Engineering	2006
			BS, Comp. Sci. & Tech.	2006
			BS, Eng. Physics	2006
			BS, Food Industry Engineering	2006
			BS, Industrial Eng. minor Systems Eng.	2006
			BS, Info. System Mgmt.	2006
			BS, Mechanical Engineering OptA	2006
			BS, Mechanical Engineering OptE	2006
			BS, Mechatronics Engineering	2006
Mexico	ABET	Instituto Tecnológico de Estudios Superiores de Monterrey, Campus Queretaro	BS, Computer Engineering	2008
			BS, Electronic & Computer Eng.	2008
			BS, Industrial Eng. minor Systems Eng.	2008
			BS, Mechanical Engineering OptA	2008
			BS, Mechatronics Engineering	2008

Mexico	ABET	Universidad Anahuac	BS, Mechatronics Engineering	2011
Mexico	ABET	Universidad Autónoma de Nuevo León	BS, Civil Engineering BS, Food Industry Eng. BS, Materials Engineering	2009 2009 2012
Mexico	ABET	Universidad Autónoma de San Luis Potosí	BS, Chemical Engineering BS, Civil Engineering BS, Electrical Engineering BS, ElectroMechanical Engineering BS, Food Engineering BS, Mechanical-Industrial Mgmt Eng. BS, Mechanical Engineering BS, Mechatronics Engineering	2012 2011 2014 2014 2012 2012 2014 2012
Peru	ABET	Pontificia Universidad Católica del Perú	BS, Civil Engineering BS, Electronic Engineering BS, Industrial Engineering BS, Informatics Engineering BS, Mechanical Engineering	2008 2008 2008 2008 2008
Peru	CEAB	Pontificia Universidad Católica del Perú	BS, Electronic Engineering BS, Industrial Engineering BS, Informatics Engineering	2008 2008 2008
Peru	EUR-ACE	Pontificia Universidad Católica del Perú	BS, Electronic Engineering BS, Industrial Engineering BS, Informatics Engineering	2008 2008 2008
Peru	ABET	TECSUP – Tecnológico Superior, Arequipa Campus	PT(BS), ElectroTechnics Technology BS, Network / Data Comm.Technology PT(BS), Plant Machinery Maintenance	2008 2009 2008
Peru	ABET	TECSUP – Tecnológico Superior, Lima Campus	PT(BS), Chem. & Metallurgical Proc. Tech. PT(BS), Electro Technics Technology PT(BS), Industrial Automation & Electronics Technology PT(BS), Network / Data Comm.Technology PT(BS), Plant Machinery Maintenance	2008 2008 2010 2009 2008
Peru	ASIIN	TECSUP – Tecnológico Superior	Tech., Chemical & Metallurgical Processes Tech., Maintenance of Heavy Machinery Tech., Industrial Electro Technical Tech., Industrial Electronics & Automation Tech., Plant Machinery Maintenance	2008 2011 2008 2008 2008
Peru	ABET	Universidad Nacional de Ingeniería	BSCE, Civil Engineering	2011
Peru	ABET	Universidad Peruana de Ciencias Aplicadas	BS, Electrical Engineering BS, Information Systems Engineering BS, Software Engineering	2008 2010 2008
Peru	ABET	Universidad Ricardo Palma	BS, Civil Engineering BS, Electronics Engineering BS, Industrial Engineering BS, Informatics Engineering (Software Eng.)	2008 2010 2010 2010
Peru	ABET	Universidad de San Martin de Porres	BS, Electronic Engineering BS, Industrial Engineering BS, Information Systems	2008 2008 2010
Peru	ASIIN	Universidad de San Martin de Porres	BS, Computer & Systems Engineering BS, Electronic Engineering BS, Industrial Engineering	2009 2009 2009
Peru	ABET	Universidad Tecnológica del Peru	BS, Electronics Engineering	2009
Puerto Rico	ABET	InterAmerican University of Puerto Rico, Bayamon Campus	BS, Electrical Engineering BS, Industrial Engineering BS, Mechanical Engineering	2009 2009 2009
Puerto Rico	ABET	Polytechnic University of Puerto Rico	BS, Chemical Engineering BS, Civil Engineering BS, Computer Engineering BS, Electrical Engineering BS, Environmental Engineering BS, Industrial Engineering BS, Land Surveying and Mapping BS, Mechanical Engineering	2006 1994 2006 1994 2000 1994 2006 1994
Puerto Rico	ABET	University of Puerto Rico – Aguadilla Campus	BS, Electronics Technology	2011
Puerto Rico	ABET	University of Puerto Rico – Arecibo Campus	BS, Computer Science B.Tech, Industrial Chemical Processes Tech.	2008 2010

Puerto Rico	ABET	University of Puerto Rico – Bayamon Campus	A.S., Civil Eng. Technology Construction BCS, Computer Science BS, Electronics Engineering Technology A.S. Industrial Engineering Technology BCS, Information Systems A.S., Instrumentation Technology A.S., Surveying Roads and Structural Civil Construction Technology	2009 2011 2009 2009 2011 2009 2009
Puerto Rico	ABET	University of Puerto Rico – Humacao Campus	A.S., Electronics Technology	2007
Puerto Rico	ABET	University of Puerto Rico – Ponce Campus	A.EngT., Civil Engineering Technology in Architectural Drafting A.EngT., Civil Engineering Technology in Construction A.Eng.T., Industrial Engineering Technology	2011 2011 2011
Puerto Rico	ABET	University of Puerto Rico – Mayagüez Campus	BS, Chemical Engineering BS, Civil Engineering BS, Computer Engineering BS, Electrical Engineering BS, Industrial Engineering BS, Mechanical Engineering	1970 1960 1992 1960 1970 1960
Puerto Rico	ABET	University of Puerto Rico – Rio Piedras Campus	BBA, Computer Information Systems BS, Computer Science	2010 2008
Puerto Rico	ABET	Universidad del Turabo	BS, Computer Engineering BS, Electrical Engineering BS, Industrial and Management Engineering BS, Mechanical Engineering	2009 2007 2007 2003
Trinidad and Tobago	UK-EC	University of Trinidad and Tobago	BEng, Applied Petroleum Engineering Tech. BTech, Electronic Engineering BTech, Mechanical Engineering BEng, Petroleum Engineer MSc, Petroleum Engineering MEng, Petroleum Engineering MSc, Petroleum Technology MSc, Reservoir Engineering	2010 2002 2002 2004 2007 2010 2007 2010
Trinidad and Tobago	UK-EC	University of West Indies	BSc, Agricultural Engineering BSc, Chemical and Process Engineering MSc, Chemical and Process Engineering MSc, Chemical and Process Engineering with Environmental Engineering MSc, Chemical and Process Engineering Management BSc, Civil and Environmental Engineering MSc, Civil with Environmental Engineering BSc, Civil Engineering MSc, Civil Engineering MSc, Construction Management BSc, Electrical and Computer Engineering BTech, Electronic Engineering MSc, Engineering Asset Management MSc, Engineering Management BSc, Industrial Engineering MSc, Manufacturing Engineering BSc, Mechanical Engineering BTech, Mechanical Engineering BSc, Mechanical Engineering with minor in Biosystems Engineering BSc, Petroleum Engineering MSc, Production Management	1994 1967 2008 2008 2008 2003 2005 2005 2005 2009 1988 2002 2008 2006 1994 2006 1994 2002 2000 2009 2006

It is curious to note that in Peru, some universities are seeking accreditation from multiple accrediting agencies (ABET, CEAB, ASIIN). This latter strategy is very costly and seems to be motivated for marketing reasons, forcing other universities in Peru to also seek multiple accreditations to remain competitive.

Analyzing the numbers of programs that attained international accreditation in Latin America and the Caribbean, classified by year first attained, yields the chart in Figure 1. A total of one hundred eighty two (182) programs have reached international accreditation. The first programs were accredited in 1960. In the following decade only 3 additional programs attained accreditation. The next 30 years only 10 more were accredited. In the first 5 years of the new millennium emphasis was made by the Ministers of Science and Technology of the 34 countries member of the Organization of American States, 15 additional programs reached accreditation, doubling the number of accredited programs in the region. In the next five years after that, 104 programs sought accreditation successfully. However in the past 5 years, only 47 new accreditation of programs were obtained. This slowdown is a cause for concern.

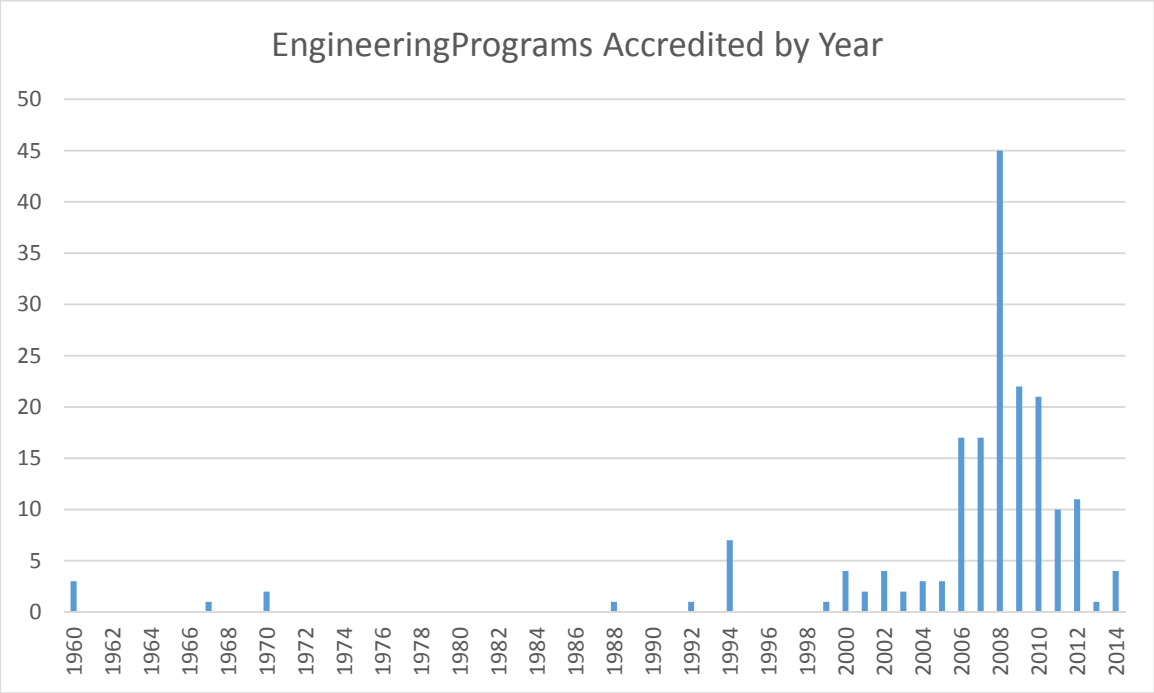

Figure 1. Number of engineering programs internationally accredited by year in Latin America and the Caribbean.

Strategies to increase accredited engineering programs in Latin America and the Caribbean

There is a need for a multipronged strategies to substantially increase the number of accredited programs in the Americas.

Strategy #1: Increase signatories of the IEA Accords

The Engineering for the Americas (EftA) initiative of the Ministers of Science and Technology of the countries of members of the OAS developed the strategy to create new accrediting agencies committed to signing the mutual recognition accords that form part of the International Engineering Agreements Alliance (IEA). With funding from Hewlett Packard and others to

write the proposal, the Interamerican Development Bank (IDB) funded the creation of two accrediting agencies:

1. ACAAI: Central American Accrediting Agency for Architecture and Engineering, was designed based on Engineers Canada's Canadian Engineering Accreditation Board (CEUB) model, which was the preferred model of Central American institutions.
2. GCREAS: Greater Caribbean Region Engineering Accreditation System, was designed based on ABET, but soon was determined by the English-speaking Caribbean not to meet their needs,

A third new accrediting agency was created by IEEE and the University of West Indies:

3. CACET: Caribbean Accreditation Council for Engineering and Technology. This was deemed to fit closer to the model for developing Chartered Engineers

However, looking at Table 1, ten years later none of the three have moved to become a provisional signatory of the Washington, Dublin, and Sydney accords. This has led to some frustration and more agencies that are accrediting in this region:

4. CFIA: Colegio Federado de Ingenieros y Arquitectos in Costa Rica is accrediting Engineering programs in Costa Rica and is seeking support from Engineers Canada to become a provisional signatory and join the IEA.

Increasing the number of signatories of the IEA would permit larger numbers of institutions to seek internationally recognized accreditation at a lower effort and cost than seeking accreditation outside of their nation/region. Hopefully other countries will join the signing, such as Mexico, Brasil, Argentina, Chile and Colombia that have mature accrediting agencies.

Strategy #2: Sign a regional accord towards mutual recognition and mobility within the LAC region

In 2010, the ALAI Latin American Engineering Accreditation Accord was signed by national and regional accrediting agencies and engineering education associations in the LAC region. Argentina (CONFEDI), Bolivia (CEUB), Brasil (ABENGE and CONFE), Central America (ACAAI), Chile (Acredita and CONFEDI), Colombia (ACOFI), Mexico (CACEI) and Paraguay (CPI). Institutions with internationally-recognized accredited programs are being asked to join the MercoSur Treaty to expand mobility to countries outside of MercoSur (Argentina, Brazil, Paraguay, Uruguay, and Venezuela; and associate countries: Chile, Bolivia, Colombia, Ecuador, and Peru).

Strategy #3: Professional societies assist national accreditation agencies to align their process to comply with the IEA Accords

The IEEE (Insittute of Electrical and Electronic Engineers) is working with the Peruvian accrediting agency, ICACIT (for its acronym in Spanish, meaning: Institute of Quality and Accreditation of Engineering Career and Technology Education), which was founded in 2001. It translated the ABET materials into Spanish, trained evaluators, and assisted in ICACIT-

ABET simultaneous accreditation visits since 2007, and ICACIT accreditation visits starting in 2009. This effort has been successful and has resulted in ICACIT being admitted as a provisional signatory.

Strategy #4: Bridge knowledge and experience gap in accreditation through capacity building

The Ministers of Science and Technology of the OAS have identified the need for bridging the knowledge and experience gap and building a culture of accreditation and quality assurance as one of 3 priority focus areas of the Engineering for the Americas initiative. Since 2006, the OAS has charged LACCEI (Latin American and Caribbean Consortium of Engineering Institutions) to lead accreditation strategies. LACCEI is a non-profit consortium of 150+ universities with interest in academic and research collaborations with Latin American and Caribbean engineering programs. Surveying its members, LACCEI found that the institutions wanted workshops to bridge the gap from deciding to explore accreditation to determining the accreditation agency, and they wanted access to a pool of trained experts in accreditation that could answer questions and assist in the accreditation process. LACCEI developed workshops under an initiative called Par Amigo (Friendly Peer). The objectives were

- Assist engineering programs with the selection of accrediting method and agency
- Assist engineering programs through the accreditation process and the preparation of the self-study
- Serve as a multilingual and multicultural resource of information, practical assistance and mentors for engineering programs considering or seeking accreditation
- Develop faculty leaders in program accreditation and assessment for accrediting agencies in the Americas
- Certify and maintain a Par Amigo registry who are familiar with and current in accreditation processes and provide cost effective assistance to engineering programs seeking accreditation by requiring each Par Amigo to donate one week a year of free training, consulting and advice.

The Engineering Education Capability Maturity Model [3] was developed for the training program for the Par Amigo initiative based on the Capability Maturity Model [4], see Figure 2, an extension of an integrated process improvement model with the goal to increase the process capability of an institution's educational processes. The *process capability* is the inherent ability of a process to produce planned results. This engineering model was used to map the activities required to complete accreditation to an appropriate level of capability of the accreditation team. Everyone starts at Level 1, where the process are adhoc and results depend on the individuals involved. By applying Project Management techniques a Disciplined Process is developed, leading to Level 2, where the results are repeatable. At Level 2, Engineering Management principles are applied to the academic process to yield a Standard, Consistent Process. At Level 3, everything is documented, defined and measured, and Quantitative Management principles are followed to yield a Predictable Process. In Level 4, the process is Managed. Change Management principles are followed to yield a Continuously Improving Process. Finally the Optimizing Level is reached, and this is where the program is deemed to be

ready for accreditation. By making the tasks and activities required for accreditation to the appropriate capability level, the team is organized to complete tasks for which they are ready. Tasks of higher level can be tackled but the program remains classified as being in the lowest level where there are tasks remaining to be completed. This model gives an efficient structure to the process of seeking accreditation, and mentally "chunks" the process into levels, allowing the faculty and administration to buy into the effort and cost of progressing one level at a time. Checklists have been developed for completing tasks at each level. This model was utilized in the development of the LACCEI Par Amigo workshop, *ABCs of Accreditation*, designed to bridge the gap to develop a culture of accreditation and an overview of the different accreditation systems. These and more advanced workshops are offered at the LACCEI Conference by the different accreditation agencies. Last year LACCEI collaborated with ABET to offer its members the advanced certificate workshops required for ABET Ideal Scholar certification, translating all materials and offering the workshops to its members with simultaneous translation and bilingual facilitators. It is hoped that this mixture of workshop would train the cadre of Ideal Par Amigo individuals willing to volunteer one week a year to help the LAC region successfully international accreditation of their engineering programs.

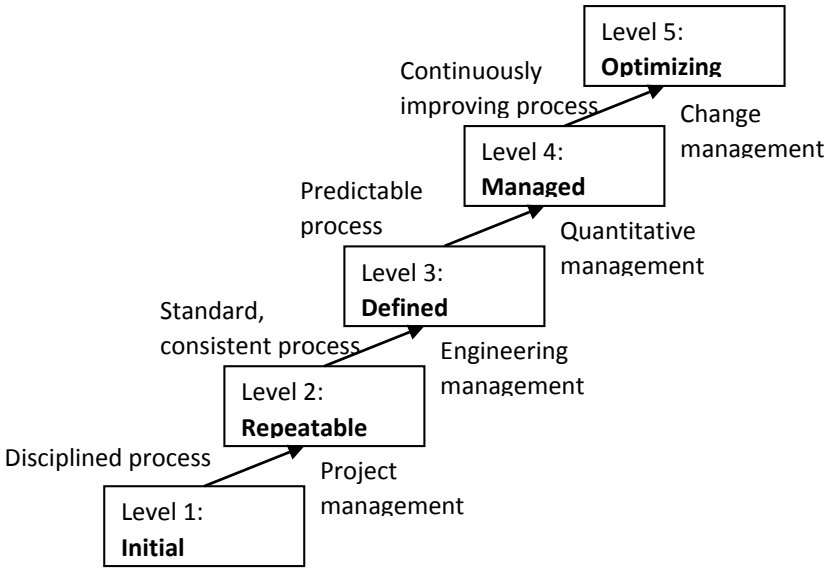

Figure 2: The Five Levels of the Capability Maturity Model

Conclusion

Much remains to be done to obtain adequate advances in engineering program accreditation in the Latin American and Caribbean region. A multipronged approach was described that involved national and regional accrediting agencies in region pursuing becoming signatories of the mutual-recognition accords that form part of the International Engineering Accreditation Alliance, expanding the regional accords to include engineering professional mobility across more nations, professional societies assisting the LAC accrediting agencies in aligning their processes to comply with the accords, and much capacity building to help the region acquire a

culture of accreditation and quality assurance while identifying and developing accreditation experts with affinity to the region.

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