

## **Accreditation of Engineering Education (Application for Funding of a Pilot Project Under GCRF\* Africa Catalyst)**

This Brief attempts to inform IEM members of two recent events which have great potential to reshape the professional engineering environment in Mauritius:

- (i) Conference of Council of Academies of Engineering and Technological Sciences (CAETS).**  
In September this year, two past Presidents of the IEM (Jayesh Desai and Jagadish Soobarah), were invited by the Royal Academy of Engineering UK, (the RAEng), to attend a Conference on **Engineering A Better World** held in London on 13 and 14<sup>th</sup> September 2016. The Conference, which was privileged with an inaugural address by Her Excellency Dr Ameenah Gurib-Fakim CSK PhD, President of the Republic of Mauritius, launched a programme called GCRF Africa Catalyst with objective to assist Sub-Saharan Professional Engineering Institutions with a view of **to ensure there is sufficient, and appropriately skilled, local engineering capacity to participate in and drive national and regional development in sub-Saharan Africa**. This Region includes Mauritius.
- (ii)** A On 5th October 2016, IEM Council took the decision to constitute a **Working Group on Engineering Accreditation (WGEA)** to pave the way for the Institution to seek and obtain membership of the **Washington Accord**, and additionally to avail itself of the opportunity offered by the Royal Academy of Engineering, under the **GCRF Programme**, to initiate a Pilot project for **Building Engineering capacity through Accreditation of Engineering Education**. The members of the Working Group on Engineering Education are: Jagadish Soobarah, Dr Andre Chan Chim Yuk, Jayesh Desai, Donald Dhondee, Ghunshyam Parsan, and the IEM President (R H Prayag). They will also act as an Interim Engineering Accreditation Council of the IEM

IEM has invited the Professional Engineering Institutions established in Mauritius requesting their collaboration on the initiatives it has launched. The Aeronautical Society of Mauritius and the Representative of ICE in Mauritius have already agreed to extend support. IEM has also informed various stakeholders (Government, TEC, Universities, etc.) of its proposed venture.

### **A Quick Background.**

It must be recalled that it was thanks to the initiative of the founder members of the Institution that CRPE came into existence. A Private Members Bill (ushered by the then Second Member for Moka Hon Robert Rey), proposing the establishment of a regulatory body for licensing engineers, that the initial legislation was passed in 1965 and promulgated on 23 December 1965 as Ordinance No 49.

It suffered an amendment in 1967 to provide for compulsory two years training in the practice of engineering for applicants to be registered for eligibility to practice. Speaking about the engineers, Hon Robert Rey said this in the assembly, *“This group of men consider it necessary to safeguard their professional interests and the interests of the public”*. IEM’s responsibility towards society was further strengthened later when it announced its Code of Ethics which declares the health, welfare, and safety of society, and protection of the environment as their first tenet.

IEM, on its own, and within the CRPE, never ceased to work towards the enhancing of the academic standard for the engineering degree or for the recognition of the status of Mauritian professional engineers. Recounting the various initiatives would be beyond the scope of this brief. We need only

\* Global Challenges Research Fund

recall that in 1983 R H Prayag (jointly with CRPE) proposed draft amendments, which went through a lengthy process and were approved after discussions within IEM on 24 November 1983; we were told that these amendments somehow disappeared on the way from the CRPE to its intended destination. Following changes in the UK by the Council of Engineering Institutions in 1997 (SARTOR-97) various proposals were discussed at the CIDB (1999), CRPE (2000) and again in 2002, which culminated in the development of a CRPE-SPEC (Standard of Professional Engineering Competence, adapted on the UKSPEC(2003) and a set of Assessment Procedures, published on CRPE website. In 2008 an IEM/CRPE initiative by J. Soobarah produced a CRPE Amendment Draft Bill which, after discussion at MPI was circulated as the Engineering Council of Mauritius (draft) Bill 2009. After a lot of bashing and battering that draft landed at the MPI as Draft Bill (2016). Council of IEM has decided it was not in the profession's interest to proceed with the draft in that form, and that IEM should consider alternative means of achieving the same objective, viz. introducing accreditation of engineering degree programmes that would be benchmarked against the Washington Accord standard, and to adopting the Singapore Model to seek admission into that august body, which is a forum within the International Engineering Alliance (the IEA); this Alliance also caters for the standards - for Technologists (Sydney Accord) and Technicians (Dublin Accord). This implies establishing an **autonomous engineering accreditation agency** under the aegis of the IEM. If Institution of Engineers Singapore did it, why cannot Institution of Engineers Mauritius do it.

### **The Relevance of the GCRF Africa Catalyst in the present context.**

The Government has, for years, been promoting Mauritius as a Regional Education Hub. IEM does not claim expertise in general education, but can certainly claim knowledge about world-wide trends in the education of engineers and about the knowledge, understanding, skills and abilities, that graduates of engineering degree programmes should have and demonstrate on graduation, and how to go about achieving this. The engineering profession is the consumer of the products delivered by the Faculties of Engineering in Mauritius. Should such products be just thrust upon us? Should the profession not have a say in the quality of these products? Unless the profession wakes up and takes an initiative to ensure that graduates in engineering outputted by the various Tertiary educational establishments attain, on graduation, an academic standard not lower than what is internationally regarded as the best, we (Mauritius) shall soon be the only "developed" country where there is a total absence of an institutional regime for accrediting engineering education.

The GCRF Africa Catalyst Scheme is an opportunity available to 49 Sub-Saharan African countries, including Mauritius. Knowing such opportunity is available, but will require solid ground work to be done by a few, if IEM were not to put in an application, we would have failed the profession and our nation if we pretended not to be aware because we could end up being the guys to be assigned the task. We are happy that IEM President R H Prayag seized the opportunity and picked on a few trustworthy colleagues for that task. The task of submitting an application has now been completed, we may still have some queries to handle, but whether we are successful or not would depend, as in all competitions, on the intensity of the competition and our excellence in presenting our case and its being shortlisted.

### **What does IEM wish to achieve from the GCRF Africa Catalyst Scheme?**

Good question! Essentially we wish to avail of the services of a knowledgeable person who can explain to our policy makers and authorities, to Engineering degree programme providers, and to the engineering fraternity itself, what accreditation of engineering education is, what its benefits and implications are. It is our sincere hope that after this intervention everyone concerned with the education, training, professional development and employment of engineers would have a clearer view of where we are compared to the outside world and what we should do about it. A second issue is to ensure that there is in Mauritius a cohort of engineers and academics in engineering who have received adequate information about engineering accreditation standards and procedures as well as on the accreditation process itself who could be depended upon to take IEM's initiative forward on the way to Washington Accord.

Who could have a problem with these proposed activities? Why would anyone object to our Universities getting an opportunity to access an accreditation system that will bring international recognition to their door-step?

### **Why the IEM ?**

Another good question! IEM and the Engineering profession want to see a credible agency in Mauritius with capacity and capability to undertake accreditation of engineering degree programmes, and which would be able to motivate the Universities to seek accreditation, even when there would be no legal compulsion for Universities to have their engineering degree programmes accredited by the Mauritian accreditation body.

Why IEM you asked? Someone must make a first move. Our previous initiatives failed. The Governance Rules of Washington Accord, or even that of the European Network of Accreditation of Engineering Education (ENAAE) if it were available to our region, state that ***neither Government controlled agencies nor Higher Educational Authorities can be admitted into the Washington Accord*** or, in the case of the ENAAE, seek authorisation to award the EUR-ACE (Masters) label, an equivalent of the Washington Accord standard. Even if set up by a Governmental authority, ***the agency must be transparent and autonomous in its decisions process***. Such an organisation should not be exceptionally rare to find. It is recalled Singapore has done it in 4 years. India managed it after 7 years as Provisional Member, but even after that Washington Accord recognises only the TIER-1 University programmes accredited by National Board of Accreditation, - these are the autonomous Universities and Institutes of Technology.

### **What about the CRPE?**

Another good question! CRPE registers professional engineers on the basis of their holding an approved degree in engineering and two years of experience. ***It does not accredit any engineering programme***. It will find its task easier if ever IEM becomes a signatory of the Washington Accord, since any engineering degree to be accredited by the eventual Engineering Accreditation Council be recognised as being equivalent or substantially equivalent to the Washington Accord standard. Accreditation will confer approval and automatic recognition to such a degree.

### **Supplementary Information: Re -The GCRF Africa Catalyst Scheme**

IEM members will find additional information about the Royal Academy of Engineering and on the GCRF Africa Catalyst Scheme by accessing the RAEng website at: <http://www.raeng.org.uk/>.

**Outcome of IEM's application**

The Application was submitted on-line on 8<sup>th</sup> November 2016, and we expect to be informed of the Outcome by 29<sup>th</sup> November 2016. If the application for £40,000 will have been successful, then signature of contract will follow within days, for a project that will run between mid-January and mid-June 2017. IEM will thereafter invite members of IEM and the profession to join us in this venture that would set up the foundation of an Institutional regime for engineering accreditation in Mauritius.

Compiled by Jagadish Soobarah on behalf of the IEM Working Group on Engineering Education.  
10 November 2016. All queries can be directed to <iem@intnet.mu>