ERCAD: Malaysia First 100 Percent Homegrown Structural Anaylisis Design Software For Educational And Industrial Purposes

Engineering fields of today have gone drastic changes due to the revolution of IT and computer technology resulting in the compulsory use of computer software in the analysis and design works of a practicing engineer. It is therefore just natural to ready the engineering students for such a skill prior to their graduation; they must be taught to use the software in the class. But, despite this very reality, Malaysian students and universities are facing a great dilemma since the possessing of such commercial software is very expensive for mostly they are foreign products.

Realizing such a dilemma, UTM with the collaboration of KPERAK INC, CREAM-CIDB and Scylla Operation Sdn Bhd, has successfully produced engineering software called Educational Reinforced Concrete Analysis and Design or ERCAD as the solution. What the software does is automate the analysis and design of low and medium rise reinforced concrete building, utilizing finite element method for the analysis and BS 8110 for the design procedures. Led by Dr. Airil Yasreen Mohd Yassin, a senior lecturer at the Faculty of Civil Engineering (FKA), UTM and a PhD from imperial College London, the work has seen the successful teamwork between a group of UTMs' mostly young academicians, handful of postgraduates student (later on to establish Scylla Operation Sdn Bhd) and officers from both CREAM-CIDB and KPERAK INC.

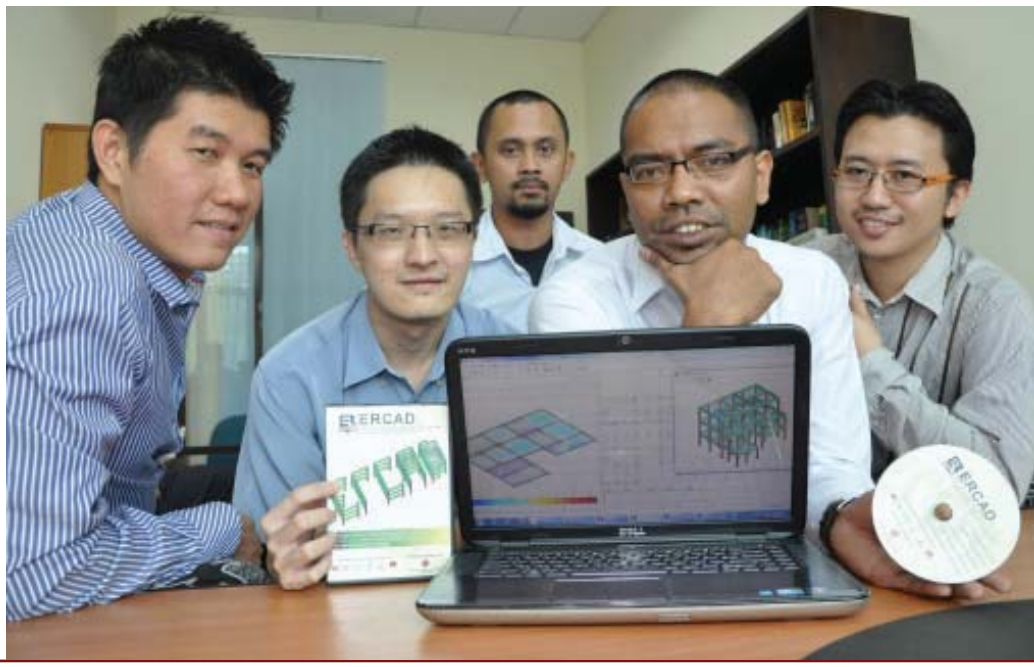
The history of the software development goes back to 2007 when CREAM-CIDB funded a research project at UTM which objective was to produce software for the design of Industrialized Building System.

The initial software was then named Automated and Integrated Design of IBS or AID-IBS in short.

Towards the end of the research duration, the commercial potential of the work was identified by KPERAK INC, a non-profit agency established by the Perak State Government responsible for the development of Perak into a fully developed knowledge state by 2020 through various ICT initiatives, which then willing to fund the pre-commercialization of the software. Due to sale and marketing strategies, the focus of the development shifted, however, towards reinforced concrete building and as a result, the software was renamed as ERCAD.

On the involvement of Scylla Operation Sdn Bhd, the establishment of the company was a natural evolution and the byproduct of the research project; the company is actually owned by a group of UTM alumni who have originally worked on the research. The establishment of the company is in line with Malaysia's higher education agenda that is to instill entrepreneurship in university's education as well to ensure the continuity of the research works.

In ensuring the quality of the software especially in terms of the performance and functionality so as to meet not only educational but industrial demands and needs, the development of the software was benchmarked against established foreign software. Also, the software has been sent for beta-test or trial-run at an established local civil engineering consulting firm and continuously monitored by several IPTs which experts have appointed as external reviewers.



UTMs' Young Minds: *(from left) Dr Norhisham Bakhary, Dr Ahmad Kueh Beng Hong, Mr Erwan Hafizi Kasiman, Dr Airil Yasreen Mohd Yassin (Research Leader) and Dr Hisham Mohamad*

The software has also been demonstrated at Jabatan Pengajian Tinggi (JPT), Malaysia and obtained a full support from the Ministry. ERCAD has also been demonstrated to many stakeholders such as JKR for continual improvement.

Since the motivation of the project is to produce software that is equivalent in performance but cheaper in price, ERCAD is provided at a very low price. Based on a selection of product packages and pricing, ERCAD can be purchased by a student at the lowest price of RM100 and this is very affordable compared to established foreign software which would cost mostly more than RM50,000 for a standalone version.

Affordable software is very much needed because current practice requires students to queue-up in getting access to the software which usually installed as network version at faculty's or department's computer lab. In contrast, ERCAD allows for self-possessed engineering software where a civil engineering student can use anywhere and anytime since it is installed in individual computer.

ERCAD can also assist civil engineering faculties and departments in the EAC-BEM accreditation since inclusion of computer aided engineering (CAE) in engineering syllabus has become one of the accreditation criteria. Based on these scenarios, it is obvious that the development of ERCAD suits local needs and serves national best interests, especially in achieving Datuk Seri Najib Razak's 3rd National Key Result Areas (NKRA) that is to increase the access to quality and affordable education.

The project thus the software has entered commercialization stage where road shows are currently conducted around the countries and so far, responses are very welcoming and encouraging. Sale promotion activities have been conducted at ten national universities and almost 200 units have been sold in its first three month of sale and marketing with revenue of more than RM100k. For interested parties, more information can be obtained by contacting Dr Airil Yasreen at 0196538360 or email: ayasreen@utm.my. Scylla Operation can be visited as http://scyllaoperation.com/.