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Two Day Workshop at Mehran University, Pakistan: For and by the Students

By Engr. Syed M. Zafi S. Shah, IEEE ComSoc Karachi Chapter Secretary, Pakistan

Recently, a workshop on "Antenna Design and Fabrication" was held at Mehran University of Engineering and Technology (MUET), Jamshoro, Pakistan, on 3-4 Sep 12 . However, this was no ordinary workshop because not only were the participants students but the organisers and instructors for the event were also students.

Pinkesh Kumar Rajani, Ahsan Memon, Daniyal Akhtar, Anum Talpur and Natasha Baloch who are studying in the third year of Bachelor of Telecommunication Engineering program at MUET undertook an internship during the summer vacations on the design and fabrication of antennae in the Department of Telecommunication Engineering under the supervision of Mr. Riaz Ahmed Soomro, a Lecturer in the department. After successful completion of the internship, IEEE Communications Society student members at MUET suggested these students to conduct a workshop to share their knowledge with their fellow students and requested the IEEE Communication Society - Karachi Chapter (ComSoc-Khi), to support the workshop , which the society willingly agreed to.

The workshop, organised by the Department of Telecommunication Engineering in collaboration with ComSoc-Khi, was a two day event and accommodated fifty (50) participants. The participation fee for the workshop was kept at only $2.5 for non-IEEE members and $2.0 for IEEE members with a further discount of 60% offered to members of Women In Engineering (WIE) in order to encourage the role of women in the engineering sector in Pakistan. The participation fee was used to arrange in-part for the reading material and refreshments for the participants while the remaining costs were borne by ComSoc-Khi. The low cost for the workshop meant that is was especially attractable for students and it was only due to logistical reasons the number of participants was kept to fifty even though the organisers received considerably greater number of applications for participation.

IEEE ComSoc-Khi Chairman and Dean Faculty of Electrical, Electronics and Computer Engineering (FEECE) at MUET, Prof. Dr. Bhawani Shankar Chowdhry, while addressing the participants said that the ComSoc-Khi is one of the most active chapters of IEEE Communications Society and that the chapter has expanded from its base in Karachi in the south, to Sukkur in the north of the Sindh province of Pakistan, within his current tenure. He further said that ComSoc-Khi will always encourage and support "student workshops" because it provides students with an excellent opportunity to learn and share technical knowledge with their peers.

The Chairman, Department of Telecommunication Engineering, Prof. Dr. Aftab Ahmed Memon, was at hand to present shields and certificates as token of appreciation to Engr. Riaz Ahmed Soomro and instructors. He also pledged to support such events in future. The student organisers, instructors and participants thanked Prof. Dr. Aftab Ahmed Memon for making available to them resources from the department for use in the workshop.

Picture (top left to bottom right): Chairman, IEEE Communications Society - Karachi Chapter & Dean FEECE Prof. Dr. Bhawani Shankar Chowdhry, and Chairman, Department of Telecommunication Engineering Prof. Dr. Aftab Ahmed Memon addressing the participants, Faculty member, Engr. Riaz Ahmed Soomro receiving an appreciation shield, and student instructors receiving their certificates.

European FP7 Project ENERsip: Bringing ICT and Energy Together

By Gregorio López and Jose Ignacio Moreno, Universidad Carlos de III de Madrid, Spain;
Pedro Moura and Anibal de Almeida, University of Coimbra, Portugal;
Boris Kantsepolsky, Motorola Solutions Israel Ltd., Israel;
Marek Sikora, Honeywell Prague Laboratory, Czech Republic

The electricity consumption in households has been steadily increasing during the last few years, up to the point that energy efficiency in the residential sector has become a capital problem for governments and utilities. The energy generation is also undergoing its own metamorphosis. The percentage of energy out of the total coming from renewables is increasing considerably and such renewable energy sources are not being deployed only as traditional bulk generation but also as distributed local generation. Therefore, M2M (Machine-to-Machine) communications infrastructures, comprising both monitoring and control networks for the consumption and generation and core communications networks for the required bidirectional bulk data exchange, are becoming more important than ever.

At this point is where the EU FP7 project ENERsip comes into play. The main goal of the ENERsip platform is to reduce the overall electricity consumption in households while integrating the local and distributed microgeneration. How? By influencing users' behaviors and by actively managing the demand side so that it matches the generation (e.g., through the so-called Demand Response programs). Thus, it is clear that ENERsip deals with an energy problem in its nature and uses ICTs as enabler technologies to solve it - as it happens in the Smart Grid in general - and the ENERsip consortium (presented in Table 1) represents a good example of the multidisciplinary teams required to face such new challenges.

The scope of the ENERsip platform is bounded to the distribution electricity networks, i.e., it is focused on neighborhoods or districts with energy-positive buildings. The ENERsip system architecture is built on four basic pillars, namely the Building Domain, the Neighborhood Domain, the Information System Domain, and the User Domain. At one edge of the platform we have the Building Domain, which include the monitoring and control networks to the consumption and generation infrastructures (so-called Home Area Networks or Building Area Networks). At the opposite edge of the platform we have the Information System and the web-based user interfaces. The Information System represents the utility backoffice and it can be seen as the energy "brain" of the platform, since it gathers all the consumption and generation data and takes the appropriate decisions. The web-based interfaces allow interacting in a human-friendly way with the platform (e.g., check from the office if we forgot the air conditioning on at home or start warming our flat when we are about to get out of the office). In between both edges, we have the Neighborhood Domain, which include the access and core M2M networks that enable the required real-time bidirectional communications [1]. Therefore, the ENERsip platform is capable of reaching individual appliances or generation equipment, monitoring their performance and controlling them remotely.

Quick Facts on ENERsip

		ICT	Energy
Consortium	University	UC3M	
		TECNALIA	ISR-UC
	Research Center		VITO
		AMPLIA	
	SME	ISA	
		Motorola Solutions	ISASTUR
			IEC
	Large Company		Honeywell
Project Type	Collaborative Project (STREP)		
Area	ICT for Energy Efficiency (ICT-2009.6.3)		
Project Duration	January 2010 – October 2012		
Website	http://www.enersip-project.eu/		

Project meeting in Asturias.

ENERsip Pilot Installations in Israel.

The implementation of each of these domains was complicated enough by itself, so their integration was undertaken following a three phase approach which allowed checking the functionality and interoperability of the developed pieces of hardware and software since the very early stages and without all the components being present. Despite of taking such precautions, some flaws were detected when running the whole system together in 24/7 mode, which illustrates the complexity of integrating components developed by different partners, from different countries, with different development and testing methodology and experience. However, such problems were finally solved and end-to-end bidirectional connectivity through the entire ENERsip platform proved to be successful in the real experimental sites.

Once the ENERsip system was properly debugged and tuned, it was validated in two independent stages. First, the Consumption Pilot focused on testing the consumption system

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Networking through the Contemporary English-Thai Telecommunications Glossary

By Wannaree Wongtrairat, Kamol Kaemarungsri and Keattisak Sripimanwat
IEEE ComSoc Thailand Chapter & ECTI-Telecom

Another portal of Thai Telecommunications Knowledge Management (TTKM) series called Thai Telecommunications Glossary (TTG) is officially released in the first quarter of 2012 to reduce the digital divide and the gap of language besides the 2009 edition of Thai Telecommunications Encyclopedia. This project recognizes the importance of well-defined contemporary meaning of telecommunications technical terms and their translations from English to Thai language. It serves as a free-of-charge service for the general public in forms of book and electronic version via the "Lexitron", a Thai-English/ English-Thai online electronic dictionary.

The main goal of this project is to create a telecommunication reference that provides common understanding on technical descriptions and promotes contemporary knowledge sharing via online social network. Historically, this project was extended from the material of the previous core achievement of the "Thai Telecommunications Encyclopedia: 2009 edition". Enhancing with the tips of telecommunication history from another published book titled "IEEE and Thai Communications History & Milestones 2011", this project finally contains more than 1,100 words in its first edition. All descriptions were edited by a technical team consisting of volunteers from several academic and research institutions nation-wide. Contemporary and concise background with above mentioned ingredients for each word is the major distinction of this technical glossary from other online languages translators. Clearly, this project requires further improvement and addition of new technical terms. The project embraces the power of social networking and is opened for public suggestions and introductions of new technical terms. The IEEE ComSoc Thailand chapter also welcomes for new volunteers who would like to share their knowledge and contribute to the future expansion of the glossary, which is now available online.

Cover Page of the Thai Telecommunications Glossary.

The first version of TTG 2011 is co-initiated by telecommunications society of the Electrical Engineering/Electronics, Computer, Telecommunications, and Information Technology association of Thailand (ECTI-Telecom), the National Electronics and Computer Technology Center (NECTEC)/NSTDA, and IEEE ComSoc Thailand chapter with special thank to the National Broadcasting and Telecommunications Commission (NBTC) for financial support to publish the hard copies. Eventually, both contemporary hard and soft versions of the current glossary were born during the 2011 mega flood in Thailand. Now it is ready to serve and free to the public via the URLs listed below according to its original objectives on reducing the language gap and the digital divide. Online information:

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IEEE ComSoc Lebanon Chapter Organizes its Second Student Competition Event

By Natasha Maalouf, AUB IEEE Student Branch, Lebanon

The American University of Beirut (AUB) hosted the Second IEEE Lebanon Communications Student Competition 2012 (IEEE LCSC'12) on July 7th, 2012; an event that was possible thanks to the platinum corporate support from Alfa, the first Lebanese mobile operator managed by Orascom Telecom, and silver corporate support from National Instruments Arabia, in addition to the collaboration of the Lebanese Association for Scientific Research (LASeR). The event was organized by the IEEE Communications Society Lebanon Chapter, with the help of the AUB IEEE Student Branch.

Thirty teams from twelve universities across Lebanon competed on the basis of their final year projects that included a telecommunications component. The teams were divided among three groups, based on their project theme: Mobile Applications and Mobile Devices; Systems, Devices and Hardware; and Algorithms, Simulations and Software. About a hundred people attended the event.

Organizing committee and invited speakers.

Students presenting their project to jury members

The event was kicked off with a series of inspirational presentations: Dean Makram Suidan of the Faculty of Engineering and Architecture at AUB, focused on the meaning of "true communication"; Dr. Mustapha Jazar, President of LASeR, defined the concept of Innovation, and after establishing the fact that Lebanon has the highest invention rate among all 22 Arab countries, concluded with a plea for Lebanese engineers "not to immigrate"; Mr. Omar Christidis, founder and CEO of ARABNET, followed with a presentation on Social Media, which "brings together people that could have

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EUROPEAN FP7 PROJECT/*continued from page 2*

components in a controlled environment (namely, a laboratory from the University of Coimbra). The main outcome of this first stage was that the ENERsip platform is able to ensure the monitoring of energy consumption with a low average error and the control of loads in scenarios of Demand Response and standby consumption removal. Next, the Demonstration Pilot focused on validating user requirements and demonstrating the ENERsip platform daily operation in real environments using real equipment. The Demonstration Pilot is deployed and still running in Israel Electric Corporation premises and involves three different sites, geographically located in different places, equipped with real consumption and generation equipment.

Finally, the potential benefits and performance of the ENERsip platform were evaluated by means of simulations. Such evaluation was divided into two independent sets assessing the main two aspects of the platform. On the one side, the Network Simulations focused on evaluating the performance of the ENERsip communications infrastructures based on a model that considers bidirectional real-time communications in short-term and long-term scenarios [2]. On the other side, the Energy Services Simulations focused on evaluating the energy and cost savings achieved through the automated coordination and scheduling of energy loads, taking into account different times of the year and different locations (and thus different weather conditions and different amounts of generated energy), different countries (with their typical tariff structures and regulatory conditions), and different configurations (e.g., different types of customers, different sets of appliances). The obtained results clearly show that the potential energy and cost savings with ENERsip can be easily over 15% in most of the cases.

In addition to that, a survey to find out the preferences of the various energy market stakeholders was elaborated and is still available for participation [3]. This survey covered questions like how much information the consumers want to know about their consumption, how much information they want to share with their provider, or how much they want to pay or reduce their comfort in exchange of more efficient operation. The results of the survey, although eventually focused mainly on residential consumers, show that ENERsip can give significant value to their customers, since it allows monitoring the electricity consumption, which is one of the main users' unfulfilled interests, as well as controlling their appliances remotely, which is also a feature requested by the majority of those polled. For the electricity providers and for the real-time operation of the grid, it is important that the users are generally willing to adjust their habits or let the operator control their appliances in exchange of receiving some incentives, and they are also not too reluctant to sharing their consumption data.

Therefore, as for today, deployed in the field at three different operational sites, the ENERsip platform represents a great step forward in demonstrating a real end-to-end platform for energy services such as consumption-generation matching. This platform will stay active and will be used as the basis for further demonstration purposes after the official project completion date. Notably, it will be used as a primary case study for demonstrating the capabilities of the project partners, as well as the outcome of the collaboration efforts of the ENERsip consortium.

As a kind of conclusion, if the Smart Grid seems to give the last push to the M2M communications market, projects like ENERsip help to pave the road to be taken.

Further Readings

[1] G. López, P. Moura, J. I. Moreno, A. de Almeida, "ENERsip: M2M-based platform to enable energy efficiency within energy-positive neighbourhoods", IEEE INFOCOM 2011 Workshop on M2M Communications and Networking, Shanghai (China), April 2011.

[2] G. López, P. Moura, V. Custodio, J. I. Moreno, "Modeling the Neighborhodd Area Networks of the Smart Grid", IEEE ICC 2012, Ottawa (Canada), June 2012.

[3] ENERsip Survey: http://limesurvey.amplia.es/index.php?sid=57793&lang=en

THAI GLOSSARY/*continued from page 3*

LEXiTRON: lexitron.nectec.or.th/telecom

Project home page: www.thaitelecomkm.org/TTG

Thai Telecommunications Knowledge Management (TTKM): www.thaitelecomkm.org

LEBANON CHAPTER/*continued from page 3*

never met or became a group in any other situation"; Ms. Dana Sleiman, business innovation manager at Ericsson, concluded the presentations by introducing the concept of a Networked Society, where "knowledge, devices and information are networked for the growth of society, life and business".

After a relaxing coffee break, the participating teams presented the main innovative features of their projects and displayed demos to the jury members, in an atmosphere of friendly competition and pleasant communication. It was then time for the respective juries to pick the winners from each group. The winning teams are:

Mobile Applications and Mobile Devices Group: Riham Pharaoun, Mahmoud Al Ahmar and Abdulkader Rokaya (AUST) "i-Display Using Smart Phone Application".

Systems, Devices and Hardware Group: Hassan Hawilo, Kassem Al Sabea, Tofik Ghandour and Ibrahim Hijazi (BAU) "IEEE 802.16e Mobile WiMAX Uplink PHY-Layer Matlab Simulation and FPGA Hardware Implementation".

Algorithms, Simulations and Software Group: Nour El Mawass (LU) "Improving the Efficiency of Wireless Sensor Networks using the principles of Genomic Robustness".

Each winning team was awarded a cash prize in addition to recognition certificates. The success of the event proved once again the aspiration of the Lebanese engineers in general, and the Lebanese communications engineers in particular, for progress and creativity, in the aim of a better life.

For more information about the IEEE Communications Society Lebanon Chapter, please check http://www.comsoc-lebanon.org.

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www.comsoc.org/gcn

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