

# AP Newsletter No. 24, Nov. 2003

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### Editorial Message

*Welcome to the 24<sup>th</sup> edition of the Comsoc AP Newsletter. I hope you will enjoy reading this latest update of IEEE Comsoc events in the Asia Pacific Region. In this issue, we provide to you a technology update on DTV development in Taiwan. In addition, two conferences reports are included: one was held in Sept, 2003, in Beijing, China, and the other took place in Penang, Malaysia. Again, I would like to take this opportunity to thank the authors for contributing to the newsletter. To make our newsletter a truly AP newsletter, we invite you to contribute articles and news on your respective regions. We would also appreciate any comments you may have to improve the newsletter. Thanks in advance and enjoy reading!*

Wanjiun Liao, Editor

Editorial Message

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## 1. APB Director's Message by Prof. Kwang-Cheng Chen

Dear APB Colleagues:

As time flies, it is near the end of 2003, about the end of this AP service teams' term. In the past a few months, we are glad to observe recovery from SARS. IEEE conferences in this region, such as APCC and PIMRC etc., are going well by IEEE ComSoc volunteers. Many ComSoc activities took place in an active way in different parts of AP region.

For the past two years, we also observe active participation for APB members in ComSoc, especially journal editorship and conference organization, which we had less involvements from AP region. If you read any IEEE journal in ComSoc or attend any IEEE conference, you may note such a trend. More important, it is a universal participation in AP region, from Japan to New Zealand. We also can see ComSoc flagship conference moving into AP more often, from Globecom in Taipei to ICC in Seoul. All came from ComSoc volunteers in AP region.

The spirit of ComSoc is volunteer service, which is a common situation in AP region now, and what this APB service team wants to promote. With the ending of this term, we can expect a greater team to continue serving AP region. The key is "your participation."

We appreciate your participation in APB and your great contribution to APB and ComSoc activities.

Best Regards,  
K.C. (Chen)

## **2. APB Office Report -- Distinguished Lecture Tours in 2003 by Fanny Su**

We are coming towards the close of a very difficult year for travel in our Region. As we take travel risk in our strides and return to our normal activities, we look towards a better 2004 for our Distinguished Lecture Tours.

We close the year 2003 with only one Distinguished Lecture Tour. We were fortunate to have Prof. Lajos Hanzo present lectures in Beijing, Shanghai, Taiwan and Penang (Malaysia) to our local ComSoc Chapter members over 6 to 22 Sept.

You may recall that last year, Prof. Lajos Hanzo conducted a marathon DLT covering 9 locations in Australia and New Zealand over 3 weeks (1-20 Sept 2002).

Once again, we would like to thank our hosting Sections and Chapters for their kind hospitality towards Prof. Lajos Hanzo. Special thanks to Prof. Lajos Hanzo for his tireless energy, time and effort spent in touring our Region.

If you have a Distinguished Lecturer in mind that you would like to invite for 2004, please let us know (ieeeeapo@pacific.net.sg). The list of ComSoc DLs and information on the DLT Program can found at this website: <http://www.comsoc.org/socstr/memprog/dislec/index.html>

## **3. Taiwan: Embracing the Digital Convergence of DTV and IP TV by Prof. Zhi-Hong Tsai, National Taiwan University**

The environment of digital convergence on video/TV technologies is taking form in Taiwan and it features in the convergence of TV broadcasting and Video service digitalization; the convergence of personal computing equipment, television and mobile terminals.; last but not least, the integration of wireless data communication and IP based multimedia broadband technology.

Currently, there are 4 types of Digitized TV service available in Taiwan:

- (1) Terrestrial DVB-T broadcasting: all terrestrial TV broadcasting networks have started their commercial DVB-T service 1Q this year, and soon many of them will have island wide coverage. Currently the LCD TV or PDP TV with DVB tuners are among the hottest consumer products in Taiwan.
- (2) Digitized Cable TV Services: all major CATV operators have started their digitization work and allocated specific frequency band (up to 750Mhz) to provide compressed digital premium TV channels to subscribers with Digital STB (set top box). Although DVB-C is the major standard adopted, many operators still select proprietary CA (conditional access) solutions.
- (3) Satellite Digital TV services: Now such services are provided by major TV broadcasters, and the future plan is to share one single satellite (ST-1) for providing its service.
- (4) IP based TV services: Internet based IP TV services have been provided by many ISPs in Taiwan, one important example is the HiChannel provided by HiNet of Chunghwa Telecom. The viewers of HiChannel only need to use traditional broadband connected PC. Another interesting IP TV example includes *IDTV*, a satellite based IP TV broadcasting service. The subscribers need to install a satellite dish to receive the broadcasting/Multicasting video IP packets, while maintaining a broadband Internet connection for the Web based control. The latest proposed IP TV service is

the MOD (Media on Demand) service provided by Chunghwa Telecom via its broadband network. The service is IP based but it adopts the concept of *Walled Garden*. In other words, it operates on an IP network, separated from the Internet. The subscribers are provided an MOD STB and use their analog TV as the display.

Although Taiwan government is actively promoting a policy of media digitalization, the protection of the suppliers and the users' rights in the digital content services, such as the digitized TV service, rely on the convergence of telecommunication and media under the immediate enactment of the related media regulations and laws. In other words, the convergence of IP multimedia, digital video, and TV technology have lead to legal revolution in Taiwan.

The issues in regulation such convergence include issues regarding digital right protection, the integrity of the supply-chain in digital services from content production to the applications/services in users STB or TV. Meanwhile, such digital convergence has triggered researchers to reconsider the directions in technology innovation, especially in the digital home environment for entertainment and information service.

The digital convergence in home TV services is taking form and simultaneously the products of wireless communication and the consumer electronic industries are becoming mature. For example, at National Taiwan University (NTU), we have established a *NTU Wireless LAN TV testbed*, to experiment scenarios of future TV service convergence services. First, with IEEE 802.11b/a/g WLAN, several PC based video encoder to encode several selected TV channels provided by local CATV, and a multicast server, we have successfully demonstrated that Tablet PC and high end PDA are now ready to support live TV services via the streaming video. In addition, we also integrated IDTV into the service so that the viewer can directly select the TV channel from one single web interface on such terminal. Currently, the major problem is the battery life and power consumption issues of terminals, However, we believe with such WLAN TV platform, other forms of digital TV, include terrestrial DVB-T and other IP based TV can all be integrated. In other words, in the future, if proper technologies and more adaptation on the terminal toward the TV services are provided, the wireless IP-based digital home network can be used to realize future portable and integrated Digital TV.

However, the following problems may still exist in the development of the digital convergence at present:

- 1) The interferences in the ISM band frequency can become a potential problem. Such interferences can arise from other home appliance, computers, or the neighborhood.
- 2) The business model of DTV depends on the content and the value added services, and such problem will deter the growth of this industry.
- 3) The data services embedded in the digital TV services can be very similar to some telecommunication service or Internet services. How such services are regulated may be different in different countries, and it will trigger debates and delay the R&D of related technologies.

The recent development of LCD/PDP TV monitor, Home network and Set-Top Box (STB) technologies have indicated fast convergence of television/computer/networking industry. However, many key components and technical solutions are often still proprietary and the consumers are thus still confused. The seamless integration of STB and digital television as well as the integration of STB of WLAN based home network may rely on further regulation, if an open environment is the final target of

our industry.

#### **4. A Brief Summary to PIMRC2003, Beijing, China, Sep.7-10, 2003, by Prof. Zhisheng Niu**

PIMRC2003 is in fact the first event that a "full-size" major conference of IEEE Communications Society comes to China, the largest developing country and also the largest mobile telecommunication market in the world. Despite of the SARS outbreak several months ago, the conference has attracted 482 participants from 28 countries or regions. Among them, 340 are from abroad and 142 from domestic. The top 10 countries/regions of participants from abroad are USA (47), Japan (45), UK (33), Korea (30), Finland (26), Germany (24), Singapore (20), France (15), Canada (10), Australia (8) and Sweden (8).

This historical symposium is jointly organized by the Chinese Institute of Electronics (CIE), Kings College of London, and Tsinghua University, under the supports from major telecommunication operators and industries. Reflecting intensive interests in the rapid developing communication technologies, PIMRC2003 received 1042 paper submissions from 41 countries and regions. This is of course the new record in the PIMRC history. After serious peer reviews by the Technical Program Committee and a good number of reviewers, 613 papers have finally been selected and edited into the proceedings. They were presented in 10 rooms in parallel.

Apart from the parallel sessions, five keynote speeches as

(1) "Development Strategy of China Information Industry"

By Mr. Lou Qinjian (*Vice-Minister, Ministry of Information Industry, CHINA*)

(2) "A Strategic Look at Mobile Communication Technologies"

By Dr. Paul Mankiewich (Chief Architect and Chief Technical Officer for Lucent, Mobility Solutions)

(3) "Evolution of Mobile Multimedia Services toward Ubiquitous Network Society"

By Dr. Yutaka Yasuda (*Vice President and General Manager of "au" Engineering Division at KDDI Corporation, Japan*)

(4) "3G" and the Evolving Mobile World"

By Professor Michael Walker, Group R&D, Vodafone

(5) "The Combination of Cellular Mobile System and WLAN"

By Mr. Lu Xiangdong, China Mobile

One Tutorial as

(1) "Adaptive Physical and Network Layer Optimization for Next- Generation Wireless Systems"

by Lie-Liang Yang and Lajos Hanzo, University of Southampton, UK

Three panel discussions as

(1) "The development of China Mobile Communications -- The connections between Technology and Market"

by Wu Jichuan, Former Minister, Ministry of Information Industry, CHINA

(2) "Technology Push & Market Pull: Where from here? --The international perspective for the technology trends and market development"

by Jari Vaario, CTO Nokia China

(3) "Win-win & Co-operation Under the New Marketing Environments -- About the development of MVNO & Mobile Value Added Services"

by Tony Hau, CEO & President of China Motion Telecom International Ltd.

were also presented at the conference, which definitely have improved the quality of the conference.

Finally, I would like to express my sincere thanks to all TPC members and anonymous reviewers for their devotion and precious time in preparing the technical program of the PIMRC'2003. Of course, all the participants are also very much appreciated. Without your participation, this conference would not be successful.

#### **5. Report on the Asia Pacific Conference on Communications (APCC2003) by Prof. Borhanuddin Mohd Ali**

The APCC2003 was successfully held in the City Bayview Hotel, Penang, 21st to 24th September 2003. It was attended by some 200 participants coming from 28 countries. About 300 papers covering various aspects of Communications were presented.

The conference was preceded with a couple of tutorial presentations on the 21st September. The topics were on VOIP delivered by Prof Lawrence Wong of Institute of Information Research, Singapore, and on Adaptive Modulation, Coding, Transmit Diversity and Networking for Next Generation Wireless Systems, by Prof Lajos Hanzo, a DLT speaker from the University of Southampton, United Kingdom. About 40 participants attended the 2 tutorials.

The opening ceremony was officiated by the General Chairman of the APCC2003, Datuk Hod Parman, who is a CEO of a private company, and being the last Director General of Telecommunications Department, Malaysia, before its dissolution, to make way for the new Communications and Multimedia Commission. He has been a key pillar in seeing through this conference through the corporate labyrinth in Malaysia. This was followed by a keynote speech by Prof Hanzo, titled Genetics in Wireless Communications, in which he attributed the Darwinian theory to some of the algorithms made for digital wireless communications.

The rest of the day and the following days, the conference went for 6 parallel tracks, devoted on various technical interests of the papers.

On the second day, a panel discussion was held on the topic of Commercialisation of Research in Malaysia. Three eminent speakers presented their perspectives: one Datuk Dr E K Chong, a former Intel Director in Penang and now advises the Penang State Government on the issue of university and industry linkages; another by Mr Dali Sardar, speaking from the Venture Capitalists perspectives; and lastly by Dr Sureswaran Ramadass, from Universiti Sains Malaysia, Penang, a researcher with a successful commercialization track record.

This panel was chaired by Datuk Hod Parman, the General Chair, who mooted the idea of this discussion, and who is incidentally a director of the Malaysian Technology Development Corporation, a public funding body for commercialization of research. The session was first presented with a view how a successful private company like Intel, Penang, manages its research and commercialization, and how the Penang State tries to enhance university industry partnership. The second speaker related to us the venture capitalists view of commercialization funding world and what they would be looking for in a venture funding. And the last speaker explained the various public funding sources for commercialization and

how we can take advantage of them.

In the final day, in addition to the normal technical track devoted to Communications, a special track was organized on Bioinformatics, the aim of which is to educate the communications engineers on some of the good things that the broadband networks would bring to specific scientific community of users, in this case the Bioinformatics. Several papers were presented first from a couple of university researchers on the topic of Genomics and Proteomics, and then from a couple of vendors describing their solutions for scientific research with Grid Computing. The last presentation talked about the new initiatives for a Malaysian Research and Education Network called MyREN, which aims to establish a test bed for universities and public research institutions in Malaysia.

On the opening day, a Conference Banquet was given, sponsored partly by Penang State Government. The APCC Steering Committee Chair, Prof Zisheng Niu, of Tsinghua University, Beijing, gave a sneak preview of next year's APCC venue, Shenzhen, a growing city just an hour's drive away from Hong Kong. He expressed his hope that all of us would follow APCC to this city next year. Incidentally, the following APCC after Shenzhen has been awarded to Perth, while the subsequent ones are still subject to review.

We would like to take this opportunity to thank Telekom Malaysia Bhd, for their generosity as the main sponsor of this event, and to Affin Merchant Bank together with Penang State Government, for joining together as financial co sponsors. We would also like to thank the APCC Steering Committee for awarding us this conference 3 years ago, and lastly to all the people who have contributed in one way or the other, towards making this conference successful, in particular to the Organising Committee and the Secretariat at the Institute of Multimedia and Software, Universiti Putra Malaysia.

Report Prepared by:  
Borhanuddin Mohd Ali, PhD (Professor),  
Conference Chair,  
APCC2003.  
6th Nov, 2003

## **6. Call for Participation – IEEE/IFIP Network Operations and Management Symposium 2004**

### **"Managing Next Generation Convergence Networks and Services"**

The 9th IEEE/IFIP Network Operations and Management Symposium (NOMS 2004) will be held 19-23 April, 2004 in COEX Convention Center, Seoul, Korea. NOMS 2004 will present the latest approaches and technical solutions in the area of network operations and management. Held in the even-numbered years since 1988, NOMS 2004 continues the established tradition of NOMS and IM as the primary forum for technical exchange of research, standards, development, systems integrator, service providers, and user communities. An exciting, peer-reviewed program of technical sessions, application sessions, panels, tutorials, posters, and vendor exhibits will address the ever-increasing interest in overall management solutions for all types of communications and computing networks, systems, services and enterprise applications. For more details, please go <http://www.noms2004.org/>.