APNOMS 2011

The 13th Asia-Pacific Network Operations and Management Symposium

Advance Program

September 21-23, 2011
Taipei, Taiwan

Managing Clouds, Smart Networks and Services

Sponsored by: KICS KNOM, IEICE ICM
Technically Co-Sponsored by: IEEE Communications Society
Supported by: CIEE, CHT, NIU, NTU, IEEE CNOM, IEEE APB, TMF, IFIP WG6.6

Chunghwa Telecom

Chunghwa Telecom is ***the largest integrated telecom service provider in Taiwan***. The goal of the company is to be a value-creating and trustworthy company in providing information & communication services.

Dr. Shyue-Ching Lu

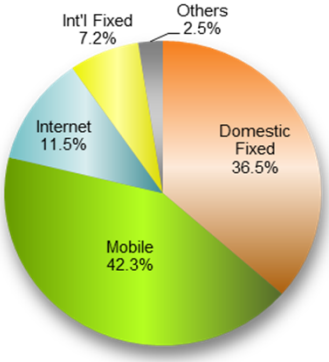
Chairman & CEO

"Our desire to build on this top-line growth and leverage our reputation for innovative offerings and premium customer service led to the launch of our "Digital Rainforest" initiative during the second quarter. This initiative builds on the significant traction we have already gained from our inroads into the digital business ecosystem, and represents a cohesive strategy for integrating and reinvigorating our activities within this space. Key elements of "Digital Rainforest" include a cloud computing initiative called hicloud PaaS, a cutting edge broadband service, integrated service platforms, and domestic and international collaboration on reducing carbon emissions to promote sustainability. We are also implementing our new channel strategy by transforming our service centers to convey our new image as we embrace the cloud computing era. I am confident that this "Digital Rainforest" initiative will provide additional momentum to our growth going forward."

Taiwan's Telecom Leader

Integrated Services Provider with Dominant Market Positions

1H 2011 Consolidated Revenue: NT$106.9bn

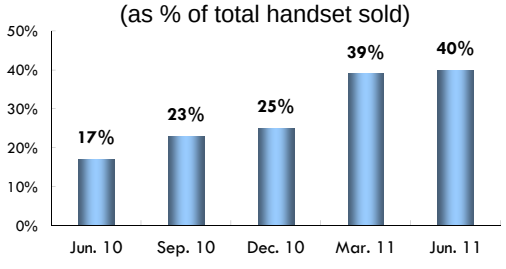


- **Strong market leader with stable market share**
- **Steady growth with focus on mobile VAS and broadband**
- **Growing momentum in MOD/IPTV**
- **Pursuing future growth opportunities (Convergence Services, Corporate ICT, Cloud Computing)**

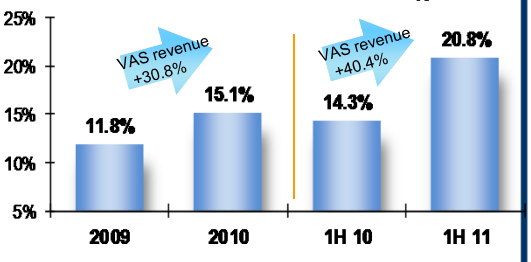
Leading Position in Mobile Market

VAS & mobile internet continue to drive

Smartphone Sales
(as % of total handset sold)



Mobile VAS Revenue %

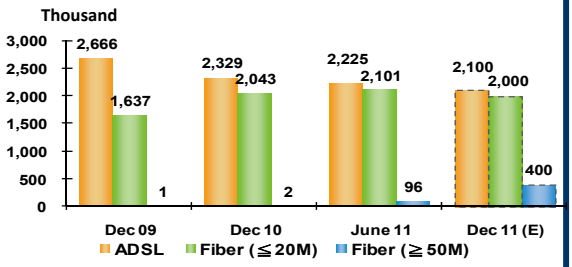


Mobile VAS Revenue %

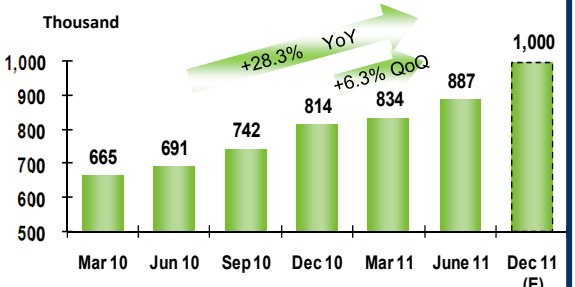
#1 Broadband/Internet Provider

Successful customer upgrade push up ARPU

Broadband Customers Migration



MOD/IPTV Subscriber



中華電信股份有限公司
Chunghwa Telecom Co., Ltd.

For more information visit:
www.cht.com.tw/ir

APNOMS 2011 Table of Contents

Welcome to APNOMS 2011

The 13th Asia-Pacific Network Operations and Management Symposium
21 - 23 September 2011 | Taipei, Taiwan

Sponsored by: KICS KNOM, IEICE ICM
Technically Co-Sponsored by: IEEE Communications Society
Supported by: CIEE, CHT, NIU, NTU, IEEE CNOM, IEEE APB, TMF, IFIP WG6.6
Managing Clouds, Smart Networks and Services

APNOMS (Asia Pacific Network Operations and Management Symposium) has been a premier conference on network operations and management in the Asia Pacific region. APNOMS meets every year, typically during September and boasts a rich history of successes. It includes a full three-day program of keynotes, tutorials, technical sessions, panel discussions, poster sessions, and exhibits that focus on managing networks that span the computing and telecommunications areas. In particular, APNOMS bring together academic scholars and industrial experts and encourage dialogues between top theoretical studies and technology developments.

APNOMS 2011 is the 13th in the series, following the successful APNOMS'97 (Seoul), APNOMS'98 (Sendai), APNOMS'99 (Kyongju), APNOMS 2000 (Nara), APNOMS 2001 (Sydney), APNOMS 2002 (Jeju), APNOMS 2003 (Fukuoka), APNOMS 2005 (Okinawa), APNOMS 2006 (Busan), APNOMS 2007 (Sapporo), APNOMS 2008 (Beijing), and APNOMS 2009 (Jeju).

APNOMS 2011 will be held in Taipei, Taiwan. We have prepared an excellent program with keynotes, technical sessions, special sessions, distinguished experts panel, innovation sessions, poster sessions, exhibitions and hot topic tutorials. Social events are planned to be held at Chiang Kai-Shek Memorial Hall and at THCC. We are looking forward to seeing you in Taipei.

APNOMS 2011 General Co-Chairs.

Yuan-Kuang Tu, Ph.D.
Chunghwa Telecom Labs, Taiwan

Prof. James Hong
POSTECH, Korea

APNOMS 2011 Vice Co-Chairs.

Prof. Shian-Shyong Tseng
Asia University, Taiwan

Prof. Choong Seon Hong
Kyung Hee Univ., Korea

Yoshiaki Kiriha, Ph.D.
NEC, Japan

Organizing Committee

General Co-Chairs	Yuan-Kuang Tu	CHTTL, Taiwan
	James Hong	Pohang Univ. of Science and Tech, Korea
Honorary General Co-Chairs	Shyue-Ching Lu	Chunghwa Telecom, Taiwan
	Si-Chen Lee	National Taiwan Univ., Taiwan
Vice Co-Chairs	Shian-Shyong Tseng	Asia Univ., Taiwan
	Choong-Seon Hong	Kyung Hee Univ., Korea
	Yoshiaki Kiriha	NEC, Japan
TPC Co-Chairs	Han-Chieh Chao	National Ilan Univ., Taiwan
	Wang-Cheol Song	Jeju National Univ., Korea
	Marat Zhanikeev	Tokyo Univ. of Science, Japan
Poster Co-Chairs	Li-Der Chou	National Central Univ., Taiwan
	Seungjoon Seok	Kyungnam Univ., Korea
	Kiyohito Yoshihara	KDDI Labs., Japan
Innovation Session Co-Chairs	Phone Lin	National Taiwan Univ., Taiwan
	Ki-Hyung Kim	Ajou Univ., Korea
	Shigeo Urushidani	NII, Japan
Special Session Co-Chairs	Ren-Hung Hwang	National Chung Cheng Univ., Taiwan
	Won-kyu Hong	KT., Korea
	Tsunemasa Hayashi	Cloud Scope, Japan
Tutorial Co-Chairs	Yen-Wen Chen	National Central Univ., Taiwan
	Hong-Taek Ju	Keimyung Univ., Korea
	Kazuhiko Kinoshita	Osaka Univ., Japan
DEP Co-Chairs	Fei-Pei Lai	National Taiwan Univ., Taiwan
	Jae-Oh Lee	Univ. of Technology and Education, Korea
	Makoto Takano	NTT, Japan
Exhibition & Patron Co-Chairs	Kuan-Hsiung Liang	CHTTL, Taiwan
	Chang-Yeong Chen	CIEE, Taiwan
	Jae-Hyoung Yoo	KT, Korea
	Seiji Okumura	CTC, Japan
Publicity Co-Chairs	Chang-Yeong Chen	CIEE, Taiwan
	Taesang Choi	ETRI, Korea
	Yuji Nomura	Fujitsu Labs., Japan
Finance Co-Chairs	Cheng-Kuan Lee	CHTTL, Taiwan
	Yoonhee Kim	Sookmyung Women's Univ., Korea
	Hideki Okita	Hitachi America, LTD, USA
Publication Co-Chairs	Chi-Shih Chao	Feng Chia Univ., Taiwan
	Jeu-Yih Jeng	CHTTL, Taiwan
Local Arrangement Co-Chairs	Kuang-Yao Chang	CHTTL, Taiwan
	Rong-Hauh Ju	CHTTL, Taiwan
Secretaries	Jung-Kuei Chen	CHTTL, Taiwan
	Young-Woo Lee	KT, Korea
	Toshio Tonouchi	NEC, Japan
Steering Committee	Nobuo Fujii	NTT-AT, Japan
	Hiroshi Uno	NTT-AT, Japan
	James Hong	Pohang Univ. of Science and Tech, Korea
	Kyung-Hyu Lee	ETRI, Korea
	Yoshiaki Tanaka	Waseda Univ., Japan
	Young-Tak Kim	Yeungnam Univ., Korea
Advisory Board	Doug Zuckerman	Telcordia, USA
	Makoto Yoshida	Univ. of Tokyo, Japan
	Masayoshi Ejiri	Japan
	Seong-Beom Kim	KNS, Korea
International Liaison	**USA:** Deep Medhi	Univ. of Missouri-Kansas City, USA
	Canada: Raouf Boutaba	Univ. of Waterloo, Canada
	Latin America: Carlos Westphall	SCFU, Brazil
	Europe: Marcus Brunner	NEC Europe, Germany
	China: John Jiahai Yang	Tsinghua Univ., China
	Hong Kong: Rocky K. C.Chang	Hong Kong Polytechnic Univ., China
	Australia: Rajan Shankaran	Macquarie Univ., Australia
	Thailand: Teerapat Sanguankotchakorn	AIT, Thailand
	Malaysia: Borhanuddin Hohd Ali	Univ. Putra, Malaysia

Technical Program Committee

TPC Co-Chairs

Han-Chieh Chao
NIU, Taiwan

Wang-Cheol Song
Jeju National Univ., Korea

Marat Zhanikeev
Tokyo University of Science, Japan

Members:

Adarsh Sethi (University of Delaware, USA)	Akira Idoue (KDDI Labs, Japan)
Alexander Keller (IBM, USA)	Antonio Liotta (University of Essex, UK)
Chia-Cheng Hu (Naval Academy, Taiwan)	Ching-Hsien (Robert) Hsu (Chung Hua University, Taiwan)
Choong Seon Hong (Kyung Hee University, Korea)	Eiji Takahashi (NEC, Japan)
Filip De Turck (Ghent University, Belgium)	Gabi Dreo Rodosek (University of Federal Armed Forces, Germany)
Hanan Lutfiyya (University of Western Ontario, Canada)	Hong-Taek Ju (Keimyung University, Korea)
Iwona Pozniak-Koszalka (Wroclaw University of Technology, Poland)	Jae-Oh Lee (Korea University of Technology and Education, Korea)
Jen-Wen Ding (National Kaohsiung University of Applied Sciences, Taiwan)	Jenq-Muh Hsu (National Chiayi University, Taiwan)
Jesse Kielthy (Waterford Institute of Technology, Irland)	Karima Boudaoud (I3S-CNRS Lab, Univ. of Nice Sophia Antipolis, France)
Kazuhiko Kinoshita (Osaka University, Japan)	Kenichi Nishikawa (NTT Corporation, Japan)
Ki-Hyung Kim (Ajou University, Korea)	Kwang-Hui Lee (Changwon National University, Korea)
Lisandro Zambenedetti Granville (UFRGS, Brazil)	Marcus Brunner (NEC Europe Ltd., Germany)
Mi-Jung Choi (Kangwon National University, Korea)	Osamu Mizuno (Kogakuin University, Japan)
Prosper Chemouil (Orange Labs, France)	Rung-Shiang Cheng (Kun Shan University, Taiwan)
Saburo Seto (NTT Corporation, Japan)	Seung-Joon Seok (Kyungnam University, Korea)
Shingo Ata (Osaka City University, Japan)	Sidath Handurukande (Ericsson Ireland)
Soo-Hyun Park (Kookmin University, Korea)	Takeshi Yasuie (Fujitsu Labs., Japan)
Takuya Asaka (Tokyo Metropolitan University, Japan)	Teerapat Sa-nguankotchakorn (AIT, Thailand)
Tin-Yu Wu (Tamkang University, Taiwan)	Whai-En Chen (National Ilan University, Taiwan)
Yangcheng Huang (Ericsson, Ireland)	Yaohui Jin (Shanghai Jiao Tong University, China)
Yong-Sheng Chen (National Taipei University of Education, Taiwan)	Yoonhee Kim (Sookmyung Women's University, Korea)
Young-Tak Kim (Yeungnam University, Korea)	Youngseok Lee (Chungnam National University, Korea)
Yuh-Shyan Chen (National Taipei University, Taiwan)	

Program at a Glance

Wednesday, 21 September 2011			
	Room 401	**Room 402 C&D**	**Room 402 A&B**
09:00 ~ 10:30	Tutorial 1	Tutorial 2	Exhibit Preparation
10:30 ~ 10:45	Coffee Break		
10:45 ~ 12:15	Tutorial 1	Tutorial 3	
12:15 ~ 13:15	Lunch		
13:15 ~ 13:55	Welcoming Address: General Chairs (Dr. Yuan-Kwang Tu & Prof. James Hong) Keynote Speech 1:		
13:55 ~ 14:10	Poster Session 1	Break	Exhibit
14:10 ~ 16:15	Technical Session 1	Technical Session 2	
16:15 ~ 16:45	Poster Session 1	Coffee Break	
16:45 ~ 18:25	Technical Session 3	Technical Session 4	
19:00 ~ 20:30	Welcome Reception(Chiang Kai-Shek Memorial Hall)		

Thursday, 22 September 2011			
	Room 401	**Room 402 C&D**	**Room 402 A&B**
09:00 ~ 10:00	Keynote Speeches 2 & 3		Exhibit
10:00 ~ 10:30	Poster Session 2	Coffee Break	
10:30 ~ 12:35	Technical Session 5	Technical Session 6	
12:35 ~ 13:35	Lunch		
13:35 ~ 15:40	Special Session 1	Technical Session 7	
15:40 ~ 16:10	Poster Session 2	Coffee Break	
16:10 ~ 18:15	Innovation Session 1	Technical Session 8	
19:00 ~ 21:00	Symposium Banquet		

Friday, 23 September 2011			
	Room 401	**Room 402 C&D**	**Room 402 A&B**
09:00 ~ 10:00	Keynotes Speeches 4 & 5		Exhibit
10:00 ~ 10:30	Poster Session 3	Coffee Break	
10:30 ~ 12:10	Special Session 2	Technical Session 9	
12:10 ~ 13:05	Lunch		
13:05 ~ 15:10	Innovation Session 2	Technical Session 10	
15:10 ~ 15:40	Poster Session 3	Coffee Break	
15:40 ~ 17:45	Distinguished Experts Panel		
17:45 ~ 18:00	Best Paper Awards & Closing Remarks		

- WiFi access will be available throughout the symposium area and Internet Café will be set up in Room 405.
- Registration Hours:
  - Tue., Sept., 20 16:00 - 18:00
  - Wed., Sept.. 21 08:00 - 18:00
  - Thur., Sept., 22 08:30 - 18:00
  - Fri., Sept., 23 08:30 - 16:30

Keynotes

Keynote 1: Wed., Sept. 21, 2011, 13:15-13:55, Room 401
Taiwan's Energy Situations and Solutions

Prof. Si-Chen Lee, President of NTU and President of CIEE

Si-Chen Lee received a Bachelor's degree in Electrical Engineering from the National Taiwan University (NTU) in 1974 and a PhD in Electrical Engineering from Stanford University in 1981. He joined the Department of Electrical Engineering, NTU in 1982 as a visiting associate professor, and is a professor now. He served as the chairman of the Department from 1988 to 1992 and the Dean of Academic Affairs from 1996 to 2002. He is now the President of NTU.

Professor Lee's research has been remarkably distinctive. It led to the innovative development of ledge-type heterojunction bipolar transistor (HBT) in 1985. Which became the norm of manufacturing HBT power amplifier and completely dominated the cell phone production in billions units every year and impacted human life style worldwide. For this achievement, he received various awards and titles of recognition. He is an IEEE Fellow, and currently serves as the President of the Chinese Institute of Electrical Engineering. He also received the IEEE Third Millennium Medal for outstanding achievements and contributions in the area of semiconductor devices in 2000.

He is especially distinguished in his public service, raising the National Taiwan University to a globally competitive status during his tenure of presidency from 2005 until the present day. Under his leadership the University administration has gone through a comprehensive restructuring, focused on excellent research and teaching.

His fundraising record is unprecedented in the history of Taiwanese universities. With his help, several colleges have been hugely improved already or are in the process of undergoing major infrastructure development. As a result of his dedication, the University has recently been ranked within the world top 100 universities in the Times Higher Education World University Rankings.

Keynote 2: Thurs., Sept. 22, 2011, 09:00-10:00, Room 401
Transformation with Cloud Computing

Dr. Yen-Sung Lee, Senior Vice President of CHT

Dr. Lee has been Senior Vice President of Chunghwa Telecom since September 2008.

He received the PH.D. degree in Computer Science from National Chiao-Tung University in 1994.

Prior to his current position, Dr. Lee was the President of Enterprise Business Group of the Company since 2007. Dr. Lee also served as the President of Telecommunication Laboratories of the Company from April 2004 to January 2007, the President of Data Business Group (HiNet) of the Company from January 2002 to April 2004, and the Senior Managing Director of Information Division of Chunghwa Telecom from July 1996 to January 2002.

With his extensive experiences and long involvement in the development and management of telecom industry, Dr. Lee is now the Chair of Cloud Service Working Group of CCAT (Cloud Computing Association in Taiwan).

Keynotes

Keynote 3: Thurs., Sept. 22, 2011, 09:00-10:00, Room 401
Security Issues and Research Challenges in Public Cloud Computing

Dr. Seong-Choon Lee, Senior Vice President of Network R&D Lab in KT

Dr. SEONG-CHOON LEE is senior vice president of Network R&D Laboratory in KT. He has been with KT since 1985.
He began his KT career in the Quality Assurance Center where he spent six years, followed by radio communication technology and business including digital broadcasting satellite and digital wireless communication.
From 2002 to now he has been responsible for the development of WiBro based femtocell and repeater, mobile video communication, future wireless internet etc.
He is a member of IEEE 802.16 and WiMAX Forum, and also served as vice president of the WiBro standardization project group in TTA, Korea.
He holds B.S, M.S., and Ph.D. degrees from Seoul National University, Korea, all in electrical engineering.

Keynote 4: Fri., Sept. 23, 2011, 09:00-10:00, Room 401
Cloud Computing and New Generation Network toward ICT Paradigm Shift

Prof. Tomonori Aoyama, Professor of Keio University

Tomonori Aoyama received the B.E., M.E. and Dr. Eng. from the University of Tokyo, Japan, in 1967, 1969 and 1991, respectively. Since he joined NTT Public Corporation in 1969, he has been engaged in R&D on communication networks and systems in the NTT Laboratories. From 1973 to 1974, he stayed in MIT as a visiting scientist. In 1995 he became Director of the NTT Optical Network Systems Laboratories. In 1997, he joined the University of Tokyo as a professor. In April 2006, he moved to Keio University, and is currently Professor of Graduate School of Media and Governance. He also serves as R&D Advisor for New Generation Network in National Institute of Information & Communications Technology (NICT).
Dr. Aoyama is a member of Science Council of Japan, an IEEE Fellow and an IEICE (Institute of Electronics, Information and Communication Engineers) Fellow.
He is serving as Chair of the Global Inter Cloud Technology Forum (GICTF), Chair of Photonic Internet Forum (PIF), Vice-chair of Ubiquitous Networking Forum, New Generation Network Promotion Forum and Japan Cloud Consortium (JCC). He is also serving as President of NPO, the Digital Cinema Consortium of Japan (DCCJ).

Keynote 5: Fri., Sept. 23, 2011, 09:00-10:00, Room 401
Semantic, Context-Aware Management

Mr. Joel J. Fleck , Chief Architect, Head of Standards, HP Software and Solutions

Joel J. Fleck II (joel.fleck@hp.com) is Chief Architect in the HP Software CTO organization and also serves as Head of Standards for HP Software. His primary research focus is on architectures for adaptive management of distributed systems and policy based management.
Recent research activities have involved the definition of a distributed adaptive management architecture for SOA and Cloud environments using a model-driven approach starting with business vocabularies and rules, the use of semantic reasoning across ontologies to verify feasibility of inter-domain relationships, and the development of Traceability Maps, a tool which graphically represents the relationships between software artifacts throughout the software lifecycle.
Prior to joining Hewlett-Packard, he spent 16 years at Bell Laboratories and Bell Communications Research researching distributed management systems, multimedia networks and automated test systems, and at Stochos, Inc. as a software architect and designer.
Joel is a frequent speaker at conferences and has published numerous papers on the subject of distributed architectures, model-driven architectures and management of distributed architectures. Joel serves on the Board of Directors and in lead executive positions for a number of international standards bodies. He also serves as Hewlett-Packard's principal representative to the Federated Autonomic Management of End-to-end Communications (FAME) project sponsored by the Science Foundation of Ireland (SFI) which partners leading Irish Universities with key industrial partners.
Joel graduated from the University of Michigan with a MS in Industrial and Operations Engineering and the University of Vermont with a BS in Computer Science. He is Distinguished Fellow of the TeleManagement Forum.

Distinguished Experts Panel

DEP Session: Fri., Sept. 23, 2011, 15:40 - 17:45, Room 401

Panel Chair — Fei-Pei Lai (National Taiwan University, Taiwan)

Feipei Lai received M.S. and Ph.D. degrees in computer science from the University of Illinois at Urbana-Champaign in 1984 and 1987, respectively.
He is a professor in the Graduate Institute of Biomedical Electronics and Bioinformatics, the Department of Computer Science & Information Engineering and the Department of Electrical Engineering at National Taiwan University. He was a vice superintendent of National Taiwan University Hospital. He was the chairman of Taiwan Network Information Center. He was a visiting professor in the Department of Computer Science and Engineering at the University of Minnesota, Minneapolis, USA. He was also a guest Professor at University of Dortmund, Germany and a visiting senior computer system engineer in the Center for Supercomputing Research and Development at the University of Illinois at Urbana-Champaign. His current research interests are SOC low power computing, Medical Information System.
Prof. Lai is one of the founders of the Institute of Information & Computing Machinery and serve as the President during 2009/7-2011/7. He is also a member of Phi Kappa Phi, Phi Tau Phi, Chinese Institute of Engineers, Chinese Institute of Electrical Engineers. Prof. Lai was the chairman of Taiwan Internet Content Rating Foundation. He received the Taiwan Fuji Xerox Research award in 1991, K-T Li's Breakthrough award in 2008, IBM faculty Award, NTU Distinguished Service Award in 2009 and Taiwan 2010 IT Distinguished Professionals.

Panelist — Dr. Rong-Syh Lin (CHT, Taiwan)

Dr. Rong-Syh Lin is currently the Deputy Senior Managing Director of Network Department of Chunghwa Telecom Co., Ltd (CHT). His career spans over twenty years in technology innovation and operations management in telecommunication sphere. His current interests are the evolution of network architecture, and BSS/OSS flexibility and agility to accelerate new service growth.
In 1989, he joined Telecommunication Labs (TL) of CHT as a Researcher. He had focused on efficient service/network operations and QoS/QoE innovation, and led the development of several Integrated Management Systems for broadband services of CHT, such as xDSL/FTTx, VPN, IPTV, and new ICT services. Since 2006, he was appointed as the program manager of CHT/TL NGOSS Evolution, which successfully transformed and consolidated dozens of BSS/OSSs based on the TMF NGOSS frameworks. In 2010, he was promoted to be the Deputy Senior Managing Director of the Network Department of CHT Headquarter.
Dr. Lin holds a Doctor degree of Computer Science in National Chiao Tung University, Taiwan.

Panelist — Dr. Atsushi Takahara (NTT, Japan)

Atsushi Takahara received a doctor of engineering degree in computer science from the Tokyo Institute of Technology. In 1988, he joind NTT. He has worked in the research of LSI design CAD system, Programmable device design, Programmable Network node architecture and flow based traffic control.
From 2003 to 2008, he worked as the director of service and operation of visual communication service in NTT BizLink. Since 2008, he has been the executive manager of Media Innovation Laboratory, NTT Network Innovation Laboratoires.
Since 2011, he is the executive director of NTT Network Innovation Laboratories. His research interests are visual communication technology, new generation network architecture, and formal methods for system design.

Distinguished Experts Panel

Panelist **Dr. Tae-Sang Choi (ETRI, Korea)**

His presentation theme is "Standardization & Reserach View for Managing Clouds and Smart Networks Services and Resources".

Taesang Choi received his MS (1990) and Ph.D (1995) degrees in Computer Science and Telecommunications in Univ. of Missouri-Kansas City. He joined ETRI in 1996 and has worked in R&D of High-quality Multimedia System, MPLS Traffic Engineering and Management, High-speed Traffic Measurement and Analysis, BcN (Broadband Convergence Network) Control and Management.

His current main research interest is Future Internet management architecture. He has also actively contributed in various SDOs such as DAVIC, IETF, ITU-T, and etc. He is currently acting as a Team leader of Future Internet Architecture team in ETRI, ITU-T SG13 Question 4 Rapporteur, ETRI Standardization Fellow, and International IT Standardization Expert representing Republic of Korea.

Panelist **Mr. Joel J. Fleck (HP, USA)**

Joel J. Fleck II (joel.fleck@hp.com) is Chief Architect in the HP Software CTO organization and also serves as Head of Standards for HP Software. His primary research focus is on architectures for adaptive management of distributed systems and policy based management.

Recent research activities have involved the definition of a distributed adaptive management architecture for SOA and Cloud environments using a model-driven approach starting with business vocabularies and rules, the use of semantic reasoning across ontologies to verify feasibility of inter-domain relationships, and the development of Traceability Maps, a tool which graphically represents the relationships between software artifacts throughout the software lifecycle.

Prior to joining Hewlett-Packard, he spent 16 years at Bell Laboratories and Bell Communications Research researching distributed management systems, multimedia networks and automated test systems, and at Stochos, Inc. as a software architect and designer.

Joel is a frequent speaker at conferences and has published numerous papers on the subject of distributed architectures, model-driven architectures and management of distributed architectures. Joel serves on the Board of Directors and in lead executive positions for a number of international standards bodies. He also serves as Hewlett-Packard's principal representative to the Federated Autonomic Management of End-to-end Communications (FAME) project sponsored by the Science Foundation of Ireland (SFI) which partners leading Irish Universities with key industrial partners.

Joel graduated from the University of Michigan with a MS in Industrial and Operations Engineering and the University of Vermont with a BS in Computer Science. He is Distinguished Fellow of the TeleManagement Forum.

Panelist **Dr. Henry Chang (IBM, USA)**

Dr. Henry Chang (hychang@us.ibm.com) is the director of Intelligent Living Services research collaboratory in Taiwan, a multi-year effort to enable holistic personalized wellness care for service modeling and innovation on shared services smart cloud. The collaboratory is conducting pilots on healthy family management, wellness prescription compliance, and social analytics for health promotion.

He is a senior technical staff member and a research manager in Healthcare transformation department at the IBM T.J. Watson Research Center. He is the research innovation lead of the IBM Websphere BPM suits and IBM internal supply chain visibility. His recent research interests include Wellness transformation for smarter healthcare, business event processing, continuous process improvement, and event-based business collaboration. He received an IBM Innovation Award for his work on model-based B2B collaboration solutions.

He specializes in model-driven analysis and solution generation for dynamic business systems. He has conducted research in the areas of business process visibility with a "sense and respond" system for internal IBM integrated supply chain. His industrial experiences include dynamic web service hub for Taiwan design collaboration among chip designers, business process analytics study for IBM BTO, and business performance monitoring for Amex strategic outsourcing account.

He has developed event-driven platforms to support loosely coupled design processes across enterprises for virtual team integration and design-time e-sourcing. Henry's main industrial experiences include managing the IBM B2B fulfillment extranet with 300 business customers, IBM semiconductor supply chain inventory monitoring system, and electronics component supply and demand integration and optimization Before joining IBM at the Thomas J. Watson Research Center, he received Ph.D. in Computer Sciences from U. Wisconsin-Madison at 1987 and a B.S. in Electrical Engineering from National Taiwan University. He is a long time member of ACM and IEEE.

Special Sessions

Session 1: Thurs., Sept. 22, 2011, 13:35-15:40, Room 401
Smart Network/Device Service and Management
Chair: Dr. Yu-Huang Chu (CHT, Taiwan)

Smart Cloud Computing Network Architecture and Services

Dr. Yu-Huang Chu (CHT, Taiwan)

Yu-Huang Chu, Ph.D., is a project manager in the broadband network department of Telecommunication Laboratories, Chunghwa Telecom Co., Ltd. He is responsible for the IP application services networking and planning team. He has been involved in planning and constructing commercial multimedia on demand service networks for 20 years. He specializes in researching and implementing IP and Triple-Play services. As key accomplishment, he has successfully deployed Broadband IP/MPLS network, NGN network, IPTV network. He is also in charge of both Future Network project and Cloud computing testing center now. He's new interest topics include Openflow, LISP, Content Centric Network, and Cloud computing testing & technology.

An M2M Integrated Platform for Telematics Services and Applications

Dr. Irene Hsu (Telecordia, USA/Taiwan)

Yuan-Ying Hsu is the research director of Telcordia Applied Research Center in Taiwan (TARC-TW). She received her B.S. (1999), M.S. (2000), and Ph.D. (2005) degrees in Computer Science and Information Engineering from National Chiao-Tung University, Taiwan. She joined TARC-TW in 2005 and led the team to successfully develop seamless roaming testbed, telematics platform, mobile resource management application, network selection module of vehicle gateway platform. She also participated in standard making in IEEE 802.16j. Her current research interests include mobile computing, mobility management, wireless mobile ad hoc networks, and Machine-to-Machine communications.

Service Platform for Supporting Multi-domain Networks and Devices

Dr. Masayoshi Ohashi (KDDI, Japan)

He received B.S., M.S. and Ph.D. degree in Engineering from Kyoto University in 1981, 1983 and 1994, respectively. He joined KDD (currently KDDI Corporation) in 1983. Since then, at KDDI R&D Labs., he was engaged in mobile satellite communication and 3rd generation mobile communications. Since the early 2000s, he was involved in national ubiquitous network projects as a project coordinator. From 2008-2010, he was a Director of Media Information Science Laboratories, ATR. He is a member of IEICE, IEEE and IPSJ.

Paradigm Shift From Dumb To Smart Pipe

Director Yeong-il Seo (KT, Korea)

Yeong-il Seo has more than 15 year extensive experiences as IP Network Engineer at KT R&D Laboratory. As key accomplishment, he successfully deployed KT NGN, and he implemented KT TPS including IPTV over KT NGN. And he upgraded KT commercial IP network (KORNET) as Top5 ISP BB in the world. He is responsible for design, deployment, and engineering of KT's IP network, and he is focusing on Smart network deployment. He was the editor of ITU-T IPTV FG and now he has an activity in IETF's P2P related WG. He is focusing on Next generation Content delivery technology, P2P issue and IETF Application-Layer Traffic Optimization technology and CDN interconnection issue.

Special Sessions

Session 2: Fri., Sept. 23, 2011, 10:30-12:10, Room 401
Cloud Service and Management
Chair: Prof. Ren-Hung Hwang (National Chung Cheng University, Taiwan)

Cloud Computing Management: What and How?

Prof. Ruay-Shiung Chang (NDHU, Taiwan)

Ruay-Shiung Chang received his B.S.E.E. degree from National Taiwan University in 1980 and his Ph.D. degree in Computer Science from National Tsing Hua University in 1988. After graduation, he had worked for Chung Shan Institute of Science and Technology and National Taiwan University of Science and Technology. He is now a vice-president of National Dong Hwa University and a professor in the Department of Computer Science and Information Engineering. His research interests include Internet, wireless networks, RFID and cloud computing. Dr. Chang is a member of ACM, a senior member of IEEE, and a founding member of Taiwan Institute of Information and Computing Machinery and Taiwan Association of Cloud Computing (TACC). Dr. Chang also served on the advisory council for the Public Interest Registry (www.pir.org) from 2004/5 to 2007/4. In 2009, Dr. Chang received the Outstanding Information Technology Elite Award from the ROC Information Month Committee. Dr. Chang is now the Chair of TACC for promoting cloud computing in Taiwan.

Peregrine: An All-Layer-2 Network in the ITRI Container Computer

Dr. Tzi-cker Chiueh (ITRI, Taiwan)

Dr. Chiueh is the General Director of Cloud Computing Center for Mobile Application, Industrial Technology Research Institute, and a Professor of Computer Science department, Stony Brook University, New York. He received his MS and Ph.D. in Computer Science from Stanford University and University of California at Berkeley, respectively, and served as the director of Core Research in Symantec Research Labs between 2007 and 2009.
Dr. Chiueh has published over 180 technical papers in refereed conferences and journals. His current research interests lie in storage systems, data center networking, virtualization and computer security.

Security Issues and Strategies for Mobile Cloud Services

Ms. Seung-Hee Han (KT, Korea)

Seung-Hee Han received the BS degree in computer science from Yonsei University in 1996, the MS degree in computer science from Korea Advanced Institute of Science and Technology (KAIST) in 2003. She worked as a designer and developer for the TongYang Systems between 1996 and 1999. After that, she also worked for the education center of Oracle Database. During the year of 2003, she was as a researcher of Digital Multimedia laboratory in LG Electronic Technology Institute. Since 2004, she has been working as a researcher of KT R&D Laboratory. She has been developed OSS systems such as NeOSS system, IPTV Application Monitoring System and Cloud Application Monitoring System. Her current research area is mobile cloud computing.

Intelligent and Open Networked Storage Systems for the Next-generation Computing

Dr. Eric Chen (FalconStor, USA/Taiwan)

Dr. Eric Chen
Vice President and General Manager, Asia Pacific Operations
FalconStor Software Inc.
Dr. Chen was a technical staff member of IBM Networking Systems, Research Triangle Park, North Carolina prior to joining FalconStor. From 1991 — 1994, he worked on projects that enabled the interworking of different communication protocols. Dr. Chen then became an Associate Professor at National Chung-Hsing University, Taiwan, teaching graduate courses in Networking, Protocol Engineering and Distributed Systems. During his tenure, he participated and advised on many industry projects as well. Dr. Chen received his Ph.D. and Masters in Computer and Information Science from Ohio State University, and a Bachelor Degree in Electrical Engineering from the National Taiwan University.

Tutorials

Tutorial 1: Wed. Sept. 21, 2011, 9:00~10:30, 10:45~12:15, Room 401
Disaster Recovery - Focused on the Earthquake in Japan
Chair: Kazuhiko Kinoshita (Osaka University, Japan)

The Damage and Restoration of Backbone Networks Regarding the Great East Japan Earthquakes

Yukio Ito (NTT Communications, Japan)

Japan has been well-known as one of quake-prone countries. Japan therefore is the most prepared country against earthquakes globally.
On March 11th 2011, 9.0 magnitude earthquake struck northeastern part of Japan. 15-meter massive Tsunami engulfed numbers of coastal cities and swallowed more than 20 thousands of people. In this catastrophe, of course, our network infrastructure could not be the exception.
We, NTT Communications, own not only a nationwide domestic network infrastructure, but also various kinds of service networks such as international submarine cables, internet, VPN, and so on. This time I would like to introduce quake-caused damage situation and how we have done for restoration from the disaster. I hope our experience helps you starting or deepening your study.

Technologies for Disaster Recovery and Measures in Access Network Systems

Hideaki Kimura (NTT Access Network Service Systems Labs., Japan)

After Eastern Japan earthquake which introduced huge disaster on March 11th, 2011, we recognized again that the communication is very important as the lifeline as well as electricity, water service, and the gas. From the view point of construction for access networks with high reliability, we believe that network design including the distribution of data center, monitoring and control of networks, and physical-resistant technologies are important and necessary. Furthermore, we learned the importance of collaborating with the government and the local communities in realizing disaster-resistant communications because truly strong, resilient and still cost-effective city requires good city planning. This tutorial introduces the future research and development for access networks to improve earthquake-resistant construction technologies considering cost-effectiveness.

Emergency Management in Disaster-Resilient Society

Yuji Maeda (NTT Service Integration Labs., Japan)

This tutorial introduces responses of the Japanese government, local governments, and lifeline companies for the 2011 off the Pacific coast of Tohoku Earthquake and a vision of a disaster resilient society that should be realized toward the major catastrophe predicted to occur in near future. A resilient society is a society that is resistant to and resilient in disasters and crises. The use of information using next-generation information and communication technology (ICT), and organization framework and emergency management based on the incident command system (ICS) is needed to realize it.

Tutorials

Tutorial 2: Wed. Sept. 21, 2011, 9:00~10:30, Room 402 C&D
Application Traffic Monitoring
Chair: Hong-Taek Ju (Keimyung University, Korea)

Development of Real-time Application Traffic Classification System

Myung-Sup Kim (Korea University, Korea)

The accurate classification of network applications or services responsible for network traffic flows offers substantial benefits to a number of essential areas in IP network engineering, management and surveillance. Internet traffic classification has been studied for a long period of time and a number of outstanding research results have been revealed based on various methods, such as header-based, payload-based, host-behavior-based, flow-statistics-based, etc. Nowadays industry and researcher are giving their attentions to the development of an application traffic classification system working on a high-speed network link in a real-time manner. This tutorial first covers various issues we have to consider in the development of a real-time application traffic classification system on a high-speed network link, where various recent classification methods will be covered in the perspective of their advantages and disadvantages. In the second part of this tutorial I will talk about our KU-MON traffic classification system which we developed and deployed on our campus network. This system pursues 100% of completeness and accuracy on a real operational network with over 1Gbps network link.

Tutorial 3: Wed. Sept. 21, 2011, 10:45~12:15, Room 402 C&D
Cloud Application Performance Management
Chair: Yen-Wen Chen (National Central Univ., Taiwan)

Application Performance Management in Cloud

Yeali Sun (National Taiwan University, Taiwan)

An important concept in cloud computing is that "Cloud provides user an abstraction of infinite pool of resources and it will respond user requests in real time". To realize the concept, one critical technology is the ability of performing dynamic scalable resource allocation and management by cloud service providers. Web applications have long been suffering from performance degradation and request blocking under unpredictable or unexpected workload increase when no extra resources are allocated for the use. Such dynamic workload fluctuations may be caused by incremental growth, time-of-day effects, and flash crowds.

Recently, when more and more applications and services are moved to cloud environments, application performance management (APM) and guarantees have received a lot of attentions as an important management discipline for cloud services. A critical component of APM is the adoption of the service level agreement (SLA) for business critical applications. Successful APM on a virtualized cloud environment requires a holistic approach which must focus on several important topics such as performance isolation, performance monitoring, performance profiling, application placement and migration, and application engineering to enable quick identification and resolution of problems that may affect SLA. In this tutorial, we will highlight the main issues of and approaches to these important and interesting topics.

Technical Sessions

TS 1:Management in Virtual Environments(Wed,Sept.21,14:10~16:15, Room 401)
Chair: Mi Jung Choi (Kangwon National University, Korea)

	Title
TS1-1	ISP-Friendly peer selection mechanism with ALTO-like server. Megumi Shibuya, Yuichiro Hei, Tomohiko Ogishi (KDDI R&D Labs Inc., Japan)
TS1-2	Dynamic resource allocation for managed self-organization. Takashi Miyamura (NTT, Japan), Yuichi Ohshita (Osaka University, Japan), Shohei Kamamura(NTT, Japan), Shin'ichi Arakawa (Osaka University, Japan), Kohei Shiomoto (NTT, Japan), Masayuki Murata (Osaka University, Japan)
TS1-3	Building an Intelligent Provisioning Engine for IaaS Cloud Computing Services. Jia-Bin Yuan, Yi-Ching Lee, Wudy Wu, Hey-Chyi Young, Kuan-Hsiung Liang (Chunghwa Telecom Labs., Taiwan)
TS1-4	SNMP-Based Monitoring of Heterogeneous Virtual Infrastructure in Clouds. Ya-Shiang Peng, Yen-Cheng Chen (National Chi Nan University, Taiwan)
TS1-5	Autonomic Management Framework for Cloud-based Virtual Networks. Taesang Choi, Nodir Kodirov, Tae-Ho Lee, Doyeon Kim, Jaegi Lee (ETRI, Korea)

TS 2: Policy Management (Wed,Sept.21,14:10~16:15, Room 402 C&D)
Chair: Jae-Oh Lee (University of Technology and Education, Korea)

TS2-1	A Flexible and Feasible Anomaly Diagnosis System for Internet Firewall Rules. Chi-Shih Chao (Feng Chia University, Taiwan)
TS2-2	Policy based Traffic Offload Management Mechanism in H(e)NB Subsystem. Longjiao Ma, Wenjing Li, Xuesong Qiu (Beijing University of Posts and Telecommunications, China)
TS2-3	IP Prefix Hijacking Detection Using the Collection of AS Characteristics. Seong-Cheol Hong (POSTECH, Korea), Hong-Taek Ju (Keimyung University, Korea), James Hong (POSTECH,Korea)
TS2-4	Efficient Method for Inferring a Firewall Policy. Hyeonwoo Kim, Hong-Taek Ju (Keimyung University, Korea)

TS 3: Traffic Management (Wed,Sept.21,16:45~18:25, Room 401)
Chair: Kazuhiko Kinoshita (Osaka University, Japan)

TS3-1	Multipath Creation Algorithm Optimizing Traffic Dispersion on Networks. Hiroshi Matsuura (NTT, Japan)
TS3-2	Real-Time Measurement of Flows Classified According to their Application. Satoru Ohta (Toyama Prefectural University, Japan), Shan Zhu (Toyama Prefectural University, China)
TS3-3	MCST: Anomaly Detection Using Feature Stability for Packet-level Traffic. Bin Zhang, Jiahai Yang, Jianping Wu, Donghong Qin, Lei Gao (Tsinghua University, China)
TS3-4	FlowInfra: A Fault-resilient Scalable Infrastructure for Network-wide Flow Level Measurement. Lei Gao, Jiahai Yang, Hui Zhang, Bin Zhang, Donghong Qin (Tsinghua University, China)

TS 4: Management of Mobile and Wireless Networks (Wed,Sept.21,16:45~18:25, Room 402 C&D)
Chair: Ryo Yamamoto (Waseda University, Japan)

TS4-1	Negotiation-based Service Self-Management Mechanism in the MANETs. Kan Chen, Xuesong Qiu, Yang Yang, LanLan Rui (Beijing University Of Posts and Telecommunications, China)
TS4-2	An Interference Management Scheme for Heterogeneous Network with Cell Range Extension. Ching-Hao Huang, Chen-Yin Liao (Chunghwa Telecom Labs., Taiwan)
TS4-3	Management of Multiplexed ATM Connection over WiMax Network. I-Hsuan Peng (Minghsin University of Science and Technology, Taiwan), Yen-Wen Chen, Chang-Wu Chen, Yu-Chin Huang (National Central University, Taiwan)
TS4-4	Real-Time Data Broadcast in K-covered Wireless Sensor Networks. I-Shyan Hwang (Yuan Ze University, Taiwan), Meng-Chun Wueng (Chunghwa Telecom labs., Taiwan), Ling-Fei Sung (Yuan Ze University, Taiwan)

TS 5: Network Operations Management (Thurs,Sept.22,10:30~12:35, Room 401)
Chair: Yeong-Il Seo (KT, Korea)

TS5-1	Evaluation of Network Fault Detection Method based on an Anomaly Detection with Matrix Eigenvector. Taku Kihara, Naoki Tateishi, Saburo Seto (NTT Network Service Systems Labs., Japan)
TS5-2	An Efficient and Secure Group Key Management Scheme Supporting Frequent Key Updates on Pay-TV systems. Kuei-Yi Chou, Yi-Ruei Chen, Wen-Guey Tzeng (National Chiao Tung University, Taiwan)
TS5-3	An Effective Weighted Matrix Algorithm for Determining Connection Status of Alarm Emitting Routes. Lee Kan Yan, Chang Chih Wei, Wang Jung Hung(Chunghwa Telecom, Taiwan), Jung Pei (Chunghwa Telecom labs., Taiwan)
TS5-4	Distributed IDS for Efficient Resource Management in Wireless Sensor Network. Eung Jun Cho, Choong Seon Hong (Kyung Hee University, Korea), Deokjai Choi (Chonnam National University, Korea)
TS5-5	Automatic Attack Detection and Correction System Development. Teerapat Sa-nguankotchakorn, Thanatorn Dechasawatwong (AIT, Thailand)

Technical Sessions

TS 6: Management Practices and Logistics (Thurs,Sept.22,10:30~12:35, Room 402 C&D) **Chair: Phone Lin (National Taiwan University, Taiwan)**	
TS6-1	A Method for Side Splitting of Packet Traces. Marat Zhanikeev (Tokyo University of Science, Japan), Ryo Yamamoto (Waseda University, Japan), Kyoko Yamori (Asahi University, Japan), Yoshiaki Tanaka (Waseda University, Japan)
TS6-2	Usage Pattern Analysis of Smartphones. Joon-Myung Kang, Sin-seok Seo, James Hong (POSTECH, Korea)
TS6-3	Combining Density-based Clustering and Wavelet Methods for Internal Systems Anomaly Detection. Shun-Te Liu, Shiou-Jing Lin (Chunghwa Telecom Labs., Taiwan), Yi-Ming Chen (National Central University, Taiwan)
TS6-4	Remote time and frequency calibration system for telecommunication synchronization applications. Jia-Lun Wang, P. C. Chang, Shinn-Yan Lin, Huang-Tien Lin, Chia-Shu Liao (Chunghwa Telecom Labs., Taiwan)
TS6-5	A Study on Smart-phone Traffic Analysis. Sang-woo Lee, Jun-Sang Park, Hyun-shin Lee, Myung-Sup Kim (Korea University, Korea)
TS 7: QoS and Performance Management (Thurs,Sept.22,13:35~15:40, Room 402 C&D) **Chair: Taesang Choi (ETRI, Korea)**	
TS7-1	Adaptive priority scheduling integrated with B-DBA for revenue optimization with QoS and CoS guarantees in GPON. I-Shyan Hwang, Jhong-Yue Lee (Yuan Ze University, Taiwan)
TS7-2	A Tradeoff Approach for the Scalability Issue in Large Self-Managed Networks. Romildo Martins (IFBA, Brazil), Joberto Martins (Salvador University – UNIFACS, Brazil)
TS7-3	Translation of Probabilistic QoS in Hierarchical and Decentralized Settings. Bjorn Bjurling, Rebecca Steinert, Daniel Gillblad (Swedish Institute of Computer Science, Sweden)
TS7-4	User-friendly Bottleneck Detection Algorithm. Ju-Won Park, Hak-Gyun Roh, Chan-Kyou Hwang, Jae-Hyoung Yoo (Korea Telecom, Korea)
TS7-5	Measuring QoE/QoS of Large Scale P2P IPTV Service. Nen-Fu Huang (National Tsing Hua University, Taiwan), Ming-Hung Wang (Academia Sinica, Taiwan), Tzu-Chien Wang, Shiu-Shun Peng (NetXtream Corp, Taiwan)
TS 8: Management in New Environments (Thurs,Sept.22,16:10~18:15, Room 402 C&D) **Chair: Chi-Sheng (Daniel) Shih (National Taiwan University, Taiwan)**	
TS8-1	Investigating the Efficiency of Fine Granularity Source Address Validation in IPv6 Networks. Fuliang Li, Changqing An, Jiahai Yang, Ning Jiang, Jianping Wu (Tsinghua University, China)
TS8-2	Adaptive Tuning of Operation Parameters for Automatically Learned Filter Table. Ning Jiang, Changqing An, Jiahai Yang (Tsinghua University, China)
TS8-3	An innovative application over Communications-as-a-Service: network-based multicast IPTV audience measurement. Li-Chia Yeh, Chingsheu Wang (Chunghwa Telecom labs., Taiwan), Chiyi Lin, Jiasiang Chen (Tamkang University, Taiwan)
TS8-4	Towards Management of Machine to Machine Network. Suman Pandey (POSTECH, Korea), Mi-Jung Choi (Kangwon National University, Korea), Myung-Sup Kim (Korea University, Korea), James Hong (POSTECH, Korea)
TS8-5	From Barren to Beautiful: A Pattern-matching Localization Scheme Integrating Heterogeneous Network Data. Chi-Chung Lo, Chih-Yao Yang, Yu-Chee Tseng (National Chiao Tung University, Taiwan), Shang-Ming Huang, Yu-Neng Hung, Chiu-Mei Tseng (Chunghwa Telecom, Taiwan), Jen-Jee Chen (National Tainan University , Taiwan)
TS 9: Content Management (Thurs,Sept.23,10:30~12:10, Room 402 C&D) **Chair: Shingo Ata (Osaka City University, Japan)**	
TS9-1	Low-Complexity Motion Estimation Algorithm Using Edge Feature for Video Compression on Wireless Video Sensor Networks. Phat Nguyen, Vinh Tran-Quang, Takumi Miyoshi (Shibaura Institute of Technology, Japan)
TS9-2	Proposal on ECO-friendly Operation Scheme for Reducing Energy Consumption of Data Center. Daisuke Arai, Hiromi Imanari, Kiyohito Yoshihara (KDDI R&D Labs Inc., Japan)
TS9-3	The Proposal of Geographically Distributed OSS Against a Great Earthquake. Yasuhiro Takeuchi, Kazuhide Takahashi, Hironao Tamura, Kousuke Kagawa, Takayuki Nakamura (NTT DoCoMo Inc., Japan)
TS9-4	Supporting an Interactive Scientific Workflow in Aerodynamic Analysis over e-Science Environment. Seoyoung Kim , Kyoung-a Yoon, Hyejeong Kang, Yoonhee Kim (Sookmyung Women's University, Korea), Chongam Kim (Seoul National University, Korea)
TS 10: Smarter Management (Thurs,Sept.23,13:05~15:10, Room 402 C&D) **Chair: Takumi Miyoshi (Shibaura Institute of Technology, Japan)**	
TS10-1	Beacon-based Trust Management for Location Privacy Enhancement VANETs. Yu-Chih Wei (Chunghwa Telecom labs., Taiwan), Yi-Ming Chen (National Central University, Taiwan), Hwai-Ling Shan(Chunghwa Telecom labs., Taiwan)
TS10-2	Network Selection Delay Comparison of Network Selection Techniques for Safety Applications on VANET. Inthawadee Chantaksinopas, Phoemphun Oothongsap, Akara Prayote (King Mongkut's University of Technology North Bangkok, Thailand)
TS10-3	An Adaptable Mobility-Aware Clustering Algorithm in Vehicular Networks. Mildred Caballeros, Choong Seon Hong (Kyung He University, Korea), Young-Cheol Bang (Korea Polytechnic University, Korea)
TS10-4	A Distributed Collaboration Scheme of Region Detection Based on Service Management of Location Based Services - Take a Commercial Vehicle Operations System as an Example. Wei Hsu-Su, Bo-Teng Deng, Chia-Hong Lin (Chunghwa Telecom Labs., Taiwan)
TS10-5	A Middleware Approach for Migration of Legacy Telecom Operational Support Systems into NGOSS-Compliant. Chun-Yen Wang (Chunghwa Telecom Labs., Taiwan), Phone Lin, Chi-Sheng Shih, Huai-Lei Fu (National Taiwan University, Taiwan), Jeu-Yih Jeng (Chunghwa Telecom Labs., Taiwan)

Short Paper Sessions

S 1: Poster Presentation (Wed,Sept.21,13:55~14:10, 16:15~16:45, Lobby and 402 A&B)
Chair: Prof. Deokjai Choi (Chonnam National University, Korea)

	Title
S1-1	Hierarchical Management System of Virtual Networks on NetFPGA. Li-Der Chou (National Central University, Taiwan), Yao-Tsung Yang (Chunghwa Telecom / National Central University, Taiwan), Wen-Pei Chang, Yi-Shou Chen, Te-Chin Chang (National Central University, Taiwan), Ce-Kuen Shieh, Sheng-Wei Huang (National Cheng Kung University, Taiwan)
S1-2	Implementation of the Management of an Optical Distribution Network in a Geographic Information System. Rong Show Kuo, Pei-Chun Chen, I-Ling Huang, Chang-Ho Chen, Shih-Wei Lai, Y.-c. Lin, Kuan-Hsiung Liang (Chunghwa Telecom Labs., Taiwan)
S1-3	A Simplified Cloud Computing Network Architecture Using Future Internet Technologies. Yu-Huang Chu, Yu-Chieh Chou, Yao-Ting Chen, Min-Chi Tseng (Chunghwa Telecom Labs., Taiwan)
S1-4	Improving NG-SDH Bandwidth Utilization by Dynamic Bandwidth Management. Min-Chia Chang, Been-Huang Liao (Chunghwa Telecom Labs., Taiwan)
S1-5	Design and Implementation of Dynamic Charging Plan for IMS-based Multicast Services. Sok-Ian Sou, Cheng-yu Hsieh, Fen-Yen Lee, Yu-Fu Lin (National Cheng Kung University, Taiwan), Jeu-Yih Jeng, Chien-Wei Cheng (Chunghwa Telecom Labs., Taiwan)
S1-6	A Distributed and Autonomic Resource Management Mechanism in Network Virtualization. Wenfeng Zhao, Shun-li Zhang, Xuesong Qiu (Beijing University of Posts and Telecommunications, China)
S1-7	SCL: Structured Configuration Language for NETCONF protocol. Khalid Elbadawi, James Yu (DePaul University, USA)
S1-8	A Policy Based Management Framework for Machine to Machine Networks and Services. Rossi Kamal, Muhammad Shoaib Siddiqui, Haw Rim, Choong Seon Hong (Kyung Hee University, Korea)
S1-9	Design and Evaluation of Integrated Monitoring Software for SaaS-Based Systems. Masahiro Yoshizawa, Ken Naono (Hitachi Ltd., Japan)
S1-10	Smart browser: Network measurement System Based on perfSONAR Framework. Pin-Hsuan Chen (National Center for High-Performance Computing, Taiwan)
S1-11	DNS Server Fingerprinting Method. Taeyoung Kim, Hong-Taek Ju (Keimyung University, Korea)
S1-12	An Innovative ICT Service Creation Approach based on IMS and Android Collaboration. Chung-Shih Tang, Yi-Kai Chiang, Chin-Ywu Twu, Ying-Dian Tsou, Gong-Da Fan (Chunghwa Telecom labs., Taiwan)
S1-13	A management for the deployment of presence service using a dynamic routing algorithm in the IMS nodes. Cho Jae-Hyoung, Jae-Oh Lee (Korea University of Technology and Education, Korea)
S1-14	Modified Adaptive Resonance Theory for Alarm Correlation Based on Distance Hierarchy in Mobile Networks. Hsin-Chieh Chao, Chieh-Ming Hsiao, Wen-Shu Su (Chunghwa Telecom Labs., Taiwan), Chung-Chian Hsu (National Yunlin University of Science and Technology, Taiwan), Chun-Ying Wu (Chunghwa Telecom Labs., Taiwan)
S1-15	Cloud Boss: Cloud-Centric BSS/OSS for Enterprise Cloud Service Operations. Huan-Guo Lin, Chung-Hua Hu, Hey-Chyi Young, Kuan-Hsiung Liang, Yung-Yi Hsu, Chia-Chen Chu, Wudy Wu, Yao-Te Huang (Chunghwa Telecom Labs., Taiwan)
S1-16	Evaluation of development optimization of LTE base station OSS by product test automation. Saki Iwami, Shinsaku Akiyama, Yuki Kishikawa, Kentaro Fujii, Satoshi Namie, Kazuhide Takahashi(NTT DoCoMo, Japan)
S1-17	OPERAS: Operation Record Analysis System for Continual Improvement of Operating Workflows. Shuntaro Kashihara, Masanori Miyazawa, Michiaki Hayashi (KDDI R&D Lab., Japan)

S 2: Poster Presentation (Thurs,Sept.22,10:00~10:30, 15:40~16:10, Lobby and 402 A&B)
Chair: Dr. Jeu-Yih Jeng (Chunghwa Telecom Labs., Taiwan)

S2-1	Measurement Analysis of Mobile Traffic in Enterprise Network. Jae Yoon Chung, Yeongrak Choi, Byung-Chul Park, James Hong (POSTECH, Korea)
S2-2	Planning and Management for Energy-Awared Mobile Networks. Chih Hsuan Tang (Chunghwa Telecom Labs., Taiwan)
S2-3	The Contract Net Based Task Allocation Algorithm in Wireless Sensor Network. Lin Chen, Xuesong Qiu, Yang Yang (Beijing University of Posts and Telecommunications, China), Zhipeng Gao (State Key Laboratory of Networking and Switching Technology, China), Zheng Qu (Beijing University of Posts and Telecommunications, China)
S2-4	Configuration of WSN using Application-aware Virtual Networks. Muhammad Shoaib Siddiqui, E.J. Cho, Choong Seon Hong (Kyung Hee University, Korea), Jongwon Choe (Sookmyung Women's University, Korea)
S2-5	Introduction to the Mesh Topology Approach for Bluetooth Scatternet Formation. Chih-min Yu (Chung Hua university, Taiwan)
S2-6	Fuzzy based Joint Radio Resource Management in Heterogeneous Wireless Network. Shun-Fang Yang, Jung-Shyr Wu (ChungHwa Telecom Labs., Taiwan)
S2-7	Single-Ended PMD Measuring Technology for Metropolitan Network. Hsiu-Jung Chuang, Sheng-Fwu Lin, Teng-Chih Feng, Si-Chong Chen, Fwu-Yuan Tsai (Chunghwa Telecom labs., Taiwan)
S2-8	Utility-based Fuzzy Wavelength Assignment in OBS Network. Sheng-Chang Chen (National Chiao Tung University, Taiwan), Wen-shiang Tang (Industrial Technology Research Institute, Taiwan), Yu-Huang Chu, He-Jyun Lin (Chunghwa Telecom Labs., Taiwan), Chung-Ju Chang (National Chiao Tung University, Taiwan)
S2-9	Integrated Monitoring Mechanism to Enhance The Management of Value-added Services in Mobile Communication Network. Hsuan-Wei Chang, Yuan-Cheng Liang, Chih-Yen Huang, Shu-Mei Huang, Kuan-Ping Lin (Chunghwa Telecom labs., Taiwan)
S2-10	A Multi-Domain Fault Localization Model for Submarine Cable System. Min Liu, Teng Che-Chun (Chunghwa Telecom labs., Taiwan)
S2-11	Online Test Framework for IPv6 SNMPv3 Agent. Li Fan Wu, Fu Chiun Huang (Chunghwa Telecom Labs., Taiwan)

Short Paper Sessions

S 2: Poster Presentation (Thurs,Sept.22,10:00~10:30, 15:40~16:10, Lobby and 402 A&B)
Chair: Dr. Jeu-Yih Jeng (Chunghwa Telecom Labs., Taiwan)

S2-12	Pinpointing Patch Impact Test Targets of Web Server Systems. Kenji Hori, Kiyohito Yoshihara (KDDI R&D Labs., Japan)
S2-13	Mobile Network Diagnosis and Location Services via Stream-based Signalling. Ling-Chih Kao, Chung-Yung Chia (Chunghwa Telecom labs., Taiwan), Ming-Feng Chang (National Chiao Tung University, Taiwan), Zsehong Tsai (National Taiwan University, Taiwan)
S2-14	A Channel Monitoring Scheme in Multiple-Antenna Wireless Communications. Ge-Lian Chao (Chunghwa Telecom Labs., Taiwan)
S2-15	A study Identifying the Connection Type of an End-host to the Network using Round-Trip-Time. Hur Min, Hyun-shin Lee, Myung-Sup Kim (Korea University, Korea)
S2-16	NetFlow-Based Network Traffic Monitoring. Weiwei Zhang, Jian Gong, Wenjie Gu, Shaomin Cai (Southeast University, China)
S2-17	A Cooperative Network Measurement Platform: Design and Implementation. Xiaodong Guo, Fenglin Qin, Liansheng Ge (Shandong University, China)
S2-18	Self-Powered Wireless Communication Platform for Disaster Relief. Tae-Ho Lee, Taesang Choi (ETRI, Korea)

S 3: Poster Presentation (Fri,Sept.23,10:00~10:30, 15:10~15:40, Lobby and 402 A&B)
Chair: Dr. Kiyohito Yoshihara (KDDI Labs., Japan)

S3-1	A Practical Chinese Wall Security Model in Cloud Computing. Tien-Hao Tsai (Chunghwa Telecom Labs., Taiwan), Yen-Chung Chen (National Chiao Tung University, Taiwan), Hsiu-Chuan Huang, Pei-Ming Huang, Kuo-Sen Chou (Chunghwa Telecom Labs., Taiwan)
S3-2	An Event-Based POI Service from Microblogs. Chun-Shuo Lin, Meng-Fen Chiang, Wen-Chih Peng (National Chiao Tung University, Taiwan), Chien-Cheng Chen (Chunghwa Telecom labs., Taiwan)
S3-3	The Research and Analysis of Worm Scanning Strategies in IPv6 Network. Junyi Li, Zhaowen Li, Su Fei, Yan Ma (Beijing University of Posts and Telecommunications, China)
S3-4	A Normalize Score for Evaluating Customer Perceived Quality. Yan-Yih Wang, Kuan-Hsiung Liang, Chang-Ping Hsu, Hsiu-fang Hu (Chunghwa Telecom labs., Taiwan)
S3-5	Method for building ad hoc social network based on user's interest. Jun Lee, Choong Seon Hong (Kyung Hee University, Korea)
S3-6	On The Security of Password-based Pairing Protocol in Bluetooth. Chia-Ming Fan, Shiuhpyng Shieh, Bing-Han Li (National Chiao Tung University, Taiwan)
S3-7	Parasitic Communication System Via Relaying. Chao-Kai Wen (National Sun Yat-sen University, Taiwan)
S3-8	Seamless On-line Service Upgrade for Telecommunication Web-Services. Chung-Keng Hung, Huai-Lei Fu, Yu-Kai Chen, Chia-Tse Chu, Kuang-Ming Huang, Chi-Sheng Shih, Phone Lin (National Taiwan University, Taiwan), Jeu-Yih Jeng (Chunghwa Telecom labs., Taiwan)
S3-9	STUN-based connection sequence through symmetric NATs for TCP connections. Junnosuke Kuroda, Yasuichi Nakayama (The University of Electro-Communicatioins, Japan)
S3-10	Combining sFlow and Tracker Traffic Analysis: A Novel Estimation Approach for Network-wide BitTorrent Distribution. Wei Ye, Xuan Luo, Rui Xie, Haibin Zhang, Kaida Jiang, Yaohui Jin (Shanghai Jiao Tong University, China)
S3-11	Content Searching Scheme Using Interesting Keyword Based Overlay Network in Content-Based Network. Rim Haw, Choong Seon Hong (Kyung Hee University, Korea), Byeongsik Kim, Ho Young Song (ETRI, Korea)
S3-12	An Improved Network Performance Anomaly Detection and Localization Algorithm. Guanjue Wang, Yan Qiao, Xuesong Qiu, Meng Luoming (Beijing University of Posts and Telecommunications, China)
S3-13	When Social Networking Meets the Next Generation Network. Rebecca Chen (IBM, Taiwan), Meng-Hsun Tsai (National Cheng Kung University, Taiwan), Tony Wrobel (IBM, Taiwan), Jui-Ming Chen (Networked Communications Program, Taiwan), Sih-Han Wang, Shu-Shan Ku, Chen-Hui Chung (National Chiao Tung University, Taiwan), Jeu-Yih Jeng (Chunghwa Telecom labs., Taiwan)
S3-14	End-to-End QoS Performance Management Across LTE networks. Li Li, Subin Shen (Nanjing University of Posts and Telecommunications, China)
S3-15	Study of Load Balance in 3GPP Femto-cell Network. Chung-Hsin Lee (Chunghwa Telecom labs., Taiwan)
S3-16	Research on Traffic Taxonomy for Internet Traffic Classification. Ji-hye Kim, Sung-Ho Yoon, Myung-Sup Kim (Korea University, Korea)
S3-17	Peer-to-Peer contents delivery system considering network distance. Takuya Okubo, Kazunori Ueda (Kochi University of Technology, Japan)
S3-18	Designing IPTV execution tool independent of service deployment. Jung Ho Kim, Cho Jae-Hyoung, Jae-Oh Lee (Korea University of Technology and Education, Korea)

Innovation Sessions

Innovation Session 1: Thurs. Sept. 22, 2011, 16:10~18:15, Room 401
Service and Fault Management

Chair: Mr. Hikaru Seshake (NTT Network Service Systems Labs., Japan)

	Title
I1-1	Automating the Lifecycle of Software-as-a-Service (SaaS) Marketplace Operations Seamlessly by iSOP (intelligent SaaS Operation management Platform). Wudy Wu, Yunru Chen (Chunghwa Telecom Labs., Taiwan)
I1-2	A Proposal of Fault Management Mechanism for Extracting Impacted Services in Virtualized Network and Data Center. Shinichi Kadono, Masanori Miyazawa, Michiaki Hayashi (KDDI R&D Labs., Japan)
I1-3	Towards Distributed and Coordinated Fault Management for Cloud Infrastructure. Osamu Watanabe (Cisco Systems, Japan)
I1-4	IPTV STB (Set-top box) Remote Firmware Upgrade Process and Implementation. In Seok Hwang (KT, Korea)
I1-5	Automatic Patch-Application to Black-box Application Programs to Prevent Deadlocks. Toshio Tonouchi (NEC, Japan)
I1-6	Design and Implementation of New Japanese Academic Backbone Network. Michihiro Aoki and Shigeo Urushidani (National Institute of Informatics, Japan)

Innovation Session 2: Fri. Sept. 23, 2011, 13:05~15:10, Room 401
Routing Management

Chair: Prof. Michihiro Aoki (National Institute of Informatics, Japan)

	Title
I2-1	A Simple Source Routing Algorithm for SAN (System Area Network). Seongbok Baik (KT Network Labs., Korea)
I2-2	Performance of Physical Layer Impairment Aware Routing and Wavelength Assignment in Wavelength Switched Optical Networks. Xin Wang, Tithra Chap, Sugang Xu, and Yoshiaki Tanaka (Waseda University, Japan)
I2-3	A Load Balancing Method with Adaptive Transmission Rate Control in Ad Hoc Networks. Ryo Yamamoto (Waseda Univ., Japan), Takumi Miyoshi (Shibaura Institute of Technology, Japan), and Yoshiaki Tanaka (Waseda University, Japan)
I2-4	Improvement of Information Retrieval Efficiency by Crossing Multiple Community Networks. Hirona Shimokawa (Osaka City University, Japan), Yasuhiro Sato (Japan Coast Guard Academy, Japan), Shingo Ata (Osaka City University, Japan), and Ikuo Oka (Osaka City University, Japan)
I2-5	The Approach of Interoperability Test in NGN_CN:Chunghwa Telecom's Experiences. Yen-Tsung Lien, Sheng Wang Yu, Ming-Yuan Shih, San Yei Chen (Chunghwa Telecom labs., Taiwan)
I2-6	Framework of IPTV Unicast Service Analysis in Enterprise Network. Kyung-Su Kim (KT, Korea)

Exhibitions

E1. Chunghwa Telecom: LTE/LTE-A System-Level Simulator
Booth number: 3

The LTE/LTE-A system-level simulator, developed by CHTTL, is a software simulation platform for evaluating the system performance of the LTE/LTE-A system.
This software simulator fully complies with the 3GPP specifications and is upgraded with the latest development of LTE/LTE-A specifications.

E2. Chunghwa Telecom: Smart Management for Mobile Data Offloading in Chunghwa Telecom(CHT)
Booth number: 1

In this exhibition, Chunghwa Telecom (CHT) will illustrate the achievement of mobile data offloading launched in the market. In addition, we will also demo our developed Wifi management systems which is applied in public side and home side. On public side, we provide a variety of management functions such as automated AP device management, multi-SSID setting, PM/FM monitoring, and integrated seamlessly with other OSSs. On home side, we provide a way of efficiently auto-configuration, software / firmware image management, immediately status and performance monitoring and diagnostics. Through this exhibition, we will let the users who transfer from 3G to Wifi surf the internet with entirely different experience of high-speed access.

E3. KT: DDoS Attack Defense Solution
Booth number: 5

KT Network R&D Lab. demonstrates the DDoS(Distributed Denia-of-Service) attack defense solution. We guarantee our customers the “strong network” against DDoS attack which attempts to flood the network bandwidth or server resources of a target system. This solution monitors the network traffic and detects abnormal traffic patterns in early stages, and then blocks them from the network. It analyses packets and flows based on the network Layer from Layer 3 to Layer 7. This also has an advantage of economics when deployed in a large network, because it is developed by utilizing the programmable NPU and commercial servers.

E4. TWNIC: IPv6 Development and Deployment in Taiwan
Booth number: 6

"The project of Interoperability and Certification of Next Generation Internet” is a national program which is executed by TWNIC to overcome the problems of IPv4 address depletion and to promote IPv6 network. In this exhibition, we will demonstrate the rich results of this IPv6 project in the areas of infrastructure transition, application development, industry promotion and IPv6 Ready Logo products.

E5. NTT COMWARE CORPORATION：Trouble Detection Technology based on the Number of System Messages
Booth number: 4

NTT COMWARE will introduce a trouble detection technology and also show a demonstration of the trouble detection. It’s difficult for operators to find the troubles of nodes such as hardware failure, software error and silent failure from a large number of system messages sent by many nodes. This technology achieves the trouble detection by analyzing the difference between past usual behavior and present behavior based on the number of system messages.

E6. National Taiwan University, Mobile Communications Networking LAB: Intelligent Social Networks Platform
Booth number: 2

In this exhibition, we will show the Intelligent Social Networks Platform designed by the NTU MCN LAB by demonstrating three advanced social network applications, including “Good Navigation”, “Fun Pull”, “P2P Reputation”. With Good Navigation, users are led to have a healthy path without traffic jam in the city. Fun Pull integrates different social network sites, e.g., FacebookTM, TwitterTM, and PlurkTM, through a single interface. With Fun Pull, users can create activities on the platform and invite friends or other users in different social network sites to join the activities. A trust model is also provided in Fun Pull for establishing trust between two strangers. P2P Reputation constructs the “connectivity” for any two users in the social networks, which help users to trust and know more new friends in the social networks.

Patrons

Platinum Patrons

Chunghwa Telecom

CHT completed its corporatization on 1 July 1996 under the direction of the Ministry of Transportation and Communications according to the Telecommunication Act and Memorandum of Chunghwa Telecom Corporation. CHT chiefly provides telecommunication and information-related services. Its scope of services covers city call, long-distance calls, international calls, GSM, data communication, Internet services, broadband networking, satellite communication, intelligent network, mobile data and multimedia broadband. As the most experienced and largest integrated telecommunication operator in Taiwan, CHT is one of the most important partners for international telecommunication cooperation, with distinctive achievements in promoting global real-time communication, improvement social life, and enhancing economic efficiency.

Gold Patrons

Nokia Siemens Networks

Nokia Siemens Networks is a leading global enabler of telecommunications services. With its focus on innovation and sustainability, the company provides a complete portfolio of mobile, fixed and converged network technology, as well as professional services including consultancy and systems integration, deployment, maintenance and managed services. It is one of the largest telecommunications hardware, software and professional services companies in the world. Operating in 150 countries, its headquarters are in Espoo, Finland. www.nokiasiemensnetworks.com Talk about Nokia Siemens Networks' news at http://blogs.nokiasiemensnetworks.com and find out if your country is exploiting the full potential of connectivity at www.connectivityscorecard.org

Silver Patrons

Alcatel-Lucent

The long-trusted partner of service providers, enterprises, strategic industries and governments around the world, Alcatel-Lucent is a leader in mobile, fixed, IP and Optics technologies, and a pioneer in applications and services. Alcatel-Lucent includes Bell Labs, one of the world's foremost centres of research and innovation in communications technology.
With operations in more than 130 countries and one of the most experienced global services organizations in the industry, Alcatel-Lucent is a local partner with global reach.
The Company achieved revenues of Euro 16 billion in 2010 and is incorporated in France and headquartered in Paris.
For more information, visit Alcatel-Lucent on: http://www.alcatel-lucent.com, read the latest posts on the Alcatel-Lucent blog http://www.alcatel-lucent.com/blog and follow the Company on Twitter: http://twitter.com/Alcatel_Lucent

Research Center for Information Technology Innovation

The Research Center for Information Technology Innovation (CITI) at Academia Sinica was founded in February 2007, with the purpose to integrate the research and development activities in information technologies among various organizations in Academia Sinica, and also to further leverage IT-related multi-disciplinary research.
Currently, CITI has four thematic centers, namely, Grid & Scientific Computing Center, Digital Content & Technology Center, Taiwan Information Security Center, Intelligent & Ubiquitous Computing Center. The mission of CITI is to promote the innovation and application of information technologies, with emphases on exploring the enabling technology for essential infrastructure and also on integrating inter-disciplinary technologies so as to provide the key ingredients that are invaluable for the upcoming knowledge-based and service-based societies.

Patrons

ERICSSON

Ericsson is the world's leading provider of technology and services to telecom operators. As the market leader in 2G, 3G and 4G mobile technologies, Ericsson provides support for networks with over 2 billion subscribers and has the leading position in managed services. The company's portfolio comprises mobile and fixed network infrastructure, telecom services, broadband and multimedia solutions for operators, enterprises and the media industry. The Sony Ericsson and ST-Ericsson joint ventures provide consumers with feature-rich personal mobile devices.
Ericsson is advancing its vision of being the "prime driver in an all-communicating world" through innovation, technology, and sustainable business solutions. Working in 175 countries, more than 90,000 employees generated revenue of SEK 203.3 billion (USD 28.2 billion) in 2010. Founded in 1876 with the headquarters in Stockholm, Sweden, Ericsson is listed on NASDAQ OMX, Stockholm and NASDAQ New York.
Being present in Taiwan for over 50 years, Ericsson's key offerings in Taiwan include end-to-end communication solutions for TV and telecom operators such as fixed and mobile broadband solutions, TV solutions, and In Building Solutions. We also provide Mobile Broadband Module and Device Interoperability Testing Center to accelerate eco system development for Taiwan's ICT industry.

Bronze Patrons

NEC

NEC Corporation is a leader in the integration of IT and network technologies that benefit businesses and people around the world. By providing a combination of products and solutions that cross utilize the company's experience and global resources, NEC's advanced technologies meet the complex and ever-changing needs of its customers. NEC brings more than 100 years of expertise in technological innovation to empower people, businesses and society. For more information, visit NEC at http://www.nec.com.

NTT COMWARE

NTT COMWARE is the "one-stop" solution enterprise that delivers total support for today's cutting-edge information technology.
Our core expertise in networks, middleware, and system development ranks among the best in Japan, and is supported by an array of state-of-the-art facilities.
Please watch the corporate information movie:
http://www.nttcom.co.jp/english/about/movie.html

KT

KT was established when it spun off from the Ministry of Communications (current Korea Communications Commission) in 1981. There were only 4.5 million lines when the company was first established, but it increased the number to 20 million in just 12 years. More recently, it established advanced broadband network for the first time in Asia, and launched Korea's first communication satellite dubbed 'Mugunghwa (Sharon's Rose)', contributing to making Korea one of the advanced countries in information and communications.
In 2009, KT merged with KTF to keep pace with the global trends of fixed/mobile convergence, and entered the new era of convergence following those of CDMA and ADSL. KT will continue to make efforts to play a leading role in the global market and become a trustworthy company by fulfilling corporate responsibility by ensuring best service quality and technology in the age of convergence where voice and data, fixed and mobile, and communication and broadcasting services are converged.

TWNIC

Officially established on 29 December 1999, Taiwan Network Information Center (TWNIC) is the organization for national network information services in Taiwan, including .tw/.台灣 domain name registration and IP address allocation. TWNIC cooperates with international Internet organizations such as ICANN and APNIC as well as equivalent national Internet organizations in other countries. The primary functions and responsibilities of TWNIC are:
* Providing .tw/.台灣 domain name and IP/ASN registration and management, as well as directory and database access; in addition, promoting Internet business in Taiwan in a spirit of non-profit, mutual and impartial sharing of network resources;
* Coordinating and facilitating activities and cooperation between national and international Internet-related organizations;
* Assisting the industry in the promotion of nationwide Internet use, and coordinating the exchange and integration of Internet information services.

Hotel Information

Recommended Hotels

Here are recommended hotels which offer privileged rates and services for APNOMS 2011 attendees only. All rates below are inclusive of 5% VAT, 10% service charge, free internet access and daily breakfast.

Hotel	Room Type	Guests	Rate (NTD)	Contact
CÆSAR PARK TAIPEI 台北凱撒大飯店	Superior Single Room	1	3600/night	Fax: 886-2-2371-0936 E-mail:caroline_tseng@caesarpark.com.tw **Reservation Form: WORD**
	Superior Twin Room	2	4000/night	
	Includes: Free use of fitness center **Special Offer: Free room upgrade from Superior to Deluxe**			
Evergreen Laurel Hotel (Taipei)	Superior Room (Queen)	1	3700/night	Fax: +886-2-2509-1280 E-mail: rogerchen@evergreen-hotels.com **Accommodation Info: WORD** **Reservation Form: WORD**
		2	4200/night	
	Deluxe Room (King)	1	4200/night	
	Deluxe Room (Twin)	2	4700/night	
	Includes: Daily fruit plate, Newspapers, Movie channel, Mineral water, Free use of fitness center. **Special Offer: Free transportation to convention center.**			
台北喜來登大飯店 Sheraton Taipei HOTEL	Deluxe King Room	1	6380/night	Fax: +886-2-2393-6824 E-mail: janet.huang@sheraton-taipei.com **Reservation Form: WORD**
	Deluxe Twin Room	2	6930/night	
The Howard PLAZA HOTEL Taipei 福華大飯店 台北	Superior Single Room	1	4840/night	Fax: +886-2-2708-2376 E-mail: wlchang-tp@howard-hotels.com.tw **Reservation Form: WORD**
	Includes: Welcome Fruits, Daily Newspaper, Free use of Health Club & Sauna & Swimming Pool Room Picture: 			
天成大飯店 COSMOS HOTEL	Superior Single Room	1	3200/night	Fax: +886-2-2311-8902 E-mail: cosmos@cosmos-hotel.com.tw **Reservation Form: WORD**
	Superior Double Room	2	3400/night	
	Superior Twin Room	2	3600/night	
	Includes: Daily Newspaper			
FORTÉ ORANGE HOTEL GUANQIAN	Standard Single	1	1700/night	Fax: (02)2747-1213 E-mail: CRC@fortehotels.com.tw **Reservation Form: WORD**
	Executive Single	1	1900/night	
	Standard Twin	2	2400/night	
	Includes: Daily mineral water			

Hotel Information

There are many hotels and inns of various kinds in Taipei which provide comfortable and cozy accommodation during your visit. Here we list some of the hotels that are not far from the venue or close to major MRT stations for your reference.

Note: Click on the Hotel name to link to its official website. The locations of the listed hotels are marked in Google Map below.

View in full size, full functional map: APNOMS 2011 Venue and nearby hotels

No.	Hotel Name	Rating	Access to Venue	Room Rate/night	Service
1	Grand Formosa Regent Taipei	5	Taxi: 1.8 km 9 min, NT$100	Single:NT$6,600 Twin:NT$7,040	Free Breakfast, Charged Internet($630), Charged Wireless($740)
2	Sheraton Taipei	4	Walk: 0.6 km 10 min	Single:NT$6,380 Twin:NT$6,930	Free Breakfast, Free Internet
3	Hotel Royal Taipei	4	Taxi: 1.7 km 8 min, NT$100	Single:NT$5,280 Twin:NT$5,885	Free Breakfast, Free Internet
4	The Howard Plaza Hotel Taipei	4	Taxi: 2.6 km 15 min, NT$120	Single:NT$4,840 Twin:NT$5,390	Free Breakfast, Free Internet
5	Miramar Garden Tapei	4	Taxi: 2.1 km 10 min, NT$120	Single:NT$4,950 Twin:NT$5,280	Free Breakfast, Charged Internet($250)
6	Ambassador Hotel	4	Taxi: 2.3 km 12 min, NT$120	Single:NT$4,785 Twin:NT$5,225	Free Breakfast, Free Internet
7	Caesar Park Taipei	4	Walk: 1km 15 min	Single:NT$3,600 Twin:NT$4,000	Free Breakfast, Free Internet (Full buffet breakfast at the specific room rate)
8	Evergreen Hotels	4	Taxi: 2.5 km 14 min, NT$120	Single:NT$3,700 Twin:NT$4,200	Free Breakfast, Free Wireless, Free Shuttle to THCC
9	Taipei Garden Hotel	4	Taxi: 2.4 km 14 min, NT$120	Single:NT$3,800 Twin:NT$4,200	Free Breakfast, Charged Internet
10	Gloria Prince Hotel Taipei	4	Taxi: 2 km 9 min, NT$100	Single:NT$3,630 Twin:NT$4,510	Free Breakfast, Free Internet
11	Cosmos Hotel	3	Walk: 1km 15 min	Single:NT$3,200 Twin:NT$3,600	Free Breakfast, Free Internet

Hotel Information

No.	Hotel Name	Rating	Access to Venue	Room Rate/night	Service
12	Forte Orange Hotel	--	Walk: 1.1km 15 min	Single:NT$1,700 Twin:NT$2,400	Free Breakfast, Free Internet
13	Howard International House Taipei	--	Taxi: 4 km 15 min, NT$150	Single:NT$1,800 Twin:NT$3,300	Free Breakfast, Charged Internet($200)
14	Q Square House	--	Taxi: 1.6 km 6 min, NT$100	Double:NT$2,200	Free Wireless
15	YMCA Taipei	--	Walk: 0.9km 13 min	Single:NT$1,620 Twin:NT$2,070	Charged Breakfast($100), Charged Internet($200), Free Wireless
16	Many Flowers Business Hotel	--	Walk: 0.5km 10 min	Double:NT$1,680	Free Breakfast, Free Internet, Free Wireless
17	Citizen Hotel	--	Walk: 1.1km 15 min	Double:NT$1,680	Free Breakfast, Free Internet
18	Taipei Backpackers Hostel	--	Taxi: 1.8 km 7 min, NT$100	Single:NT$800 Double:NT$1,300	Shared Toilet, Free Wireless
19	Taipei Hostel	--	Walk: 0.8km 13 min	Single:NT$500 Double:NT$600	Shared Toilet, Free Wireless

For those who want to choose the other hotels that are not listed, here are some good websites that help. Some of them are available in multiple languages including Korean and Japanese.

- Expedia
- bookings.com
- Taipei Hotels
- Hostelworld

We remind you that few taxi drivers in Taiwan speak English. So it's best to always bring a business card of your hotel along.

Symposium Registration

Attendee/Type	Early-Bird/Presenters (by Aug. 5, 2011)	Advance (by Aug. 31, 2011)	Late/Onsite (after Aug. 31, 2011)
Full	11,500 TWD (about 400 USD)	13,000 TWD (about 450 USD)	14,400 TWD (about 500 USD)
Student	4,300 TWD (about 150 USD)	5,000 TWD (about 175 USD)	5,750 TWD (about 200 USD)
Exhibitor	4,300 TWD (about 150 USD)	5,750 TWD (about 200 USD)	7,200 TWD (about 250 USD)
Extra Banquet Ticket	1,400 TWD (about 50 USD)	1,400 TWD (about 50 USD)	1,400 TWD (about 50 USD)
Extra Proceedings	850 TWD (about 30 USD)	850 TWD (about 30 USD)	850 TWD (about 30 USD)

- Full registration fee includes proceedings, admissions to tutorial sessions, technical sessions, banquet, three lunches and coffee breaks.
- Student registration fee includes the same as full registration except the banquet is not included.
- Exhibitor registration fee includes lunches and banquet, but does not include admission to the tutorials and technical sessions.
- For **each of all accepted papers, at least one author including students must register by the Early-Bird due date at the Full rate** in order to guarantee their papers to be published in the symposium proceedings and IEEE XploreR.
- Presenters must provide the paper number and title of their paper.
- Registration fees will **be charged in Taiwan Dollars (TWD) only** according to local financial regulations.

Welcome Reception

Welcome Reception

- 19:00 – 20:30, Wednesday, September 21, 2011
- National Theater Hall Lobby, National Chang Kai Shek Cultural Center

Our welcome reception party will be held in the National Theater Hall Lobby, National Chang Kai Shek Cultural Center at 7:00 p.m., September 21.

All attendees are invited to join this cocktail party surrounded by casual music, delicious cuisine and cold beer.

- Bags & Coat Check

All attendees can lighten your load while at our welcome reception party by letting us watch your bags, laptops, coats, or any personal items you don't feel like carrying around.

- Transportation:

We prepare 4 buses to drive you there, or you could just take a 15 minute walk

National Theater Hall

Lobby

Lunch

Lunch

Lunches will be provided to all attendees during the symposium. When you check in at the registration desk, be sure to receive lunch tickets for 3 days. We may provide lunches in lunch box or light meal buffet style. Final arrangement for everyday lunch will be announced in a note in your registration bag, or you can confirm with our staffs at the registration desk.

Symposium Banquet

Symposium Banquet

- 7:00 – 9:00 p.m., Thursday, September 22, 2011
- Banquet Hall, #201 second floor in THCC

Invited speakers, exhibitors, and all attendees with full registration are welcome to the symposium banquet. Extra banquet tickets for accompanying people or student attendees can be purchased at registration desk for TWD 1,400. Just relax and enjoy the excellent entertainment program, delicious cuisine and fine wine.

Banquet Hall

VISA Assistance

COUNTRIES ELIGIBLE FOR VISA-EXEMPT ENTRY:

1. Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, *Ireland, Italy, *Japan, Republic of Korea, Latvia, Liechtenstein, Lithuania, Luxembourg, Malaysia, Malta, Monaco, the Netherlands ,*New Zealand, Norway, Poland, Portugal, Singapore, Slovakia, Slovenia , Spain, Sweden, Switzerland, *U.K. , U.S.A. and Vatican City State.
2. Passport holders of India, Thailand, Philippines, Vietnam, Indonesia, who also possess a valid visa or permanent residence certificate issued by U.S.A., Canada, Japan, U.K., Schengen Convention countries, Australia or New Zealand. Travelers meeting the above qualifications and having never been employed in Taiwan as blue-collar workers, have to first register information concerning their documents and personal data into the "Advance Online Registration System for the Visitors of Nationals from Five Southeast Asian Countries to Taiwan ". Upon completion, the printed confirmation is used to validate the traveler during the boarding and the immigration check. During the immigration check, travelers who can not show a valid visa or permanent resident visa issued by one of the aforementioned developed countries will not be admitted into the country.

For further information, please click here.

COUNTRIES ELIGIBLE FOR LANDING VISAS:

1. Holders of emergency or temporary passports with validity more than six months for nationals of those countries eligible for visa-exempt entry.
2. Holders of USA passport with validity less than six months.

For further information, please click here.

COUNTRIES ELIGIBLE FOR LANDING VISAS:

Citizens of other countries should apply for a visa before traveling to Taiwan. The Procedures:

1. Applicants can lodge their applications with the necessary documents and statutory fee at our overseas missions.
2. Interview may be required when necessary.

For further information about the visitor visa for attending conference, please click here.

For further help about visa, please contact the overseas Taipei Economic and Cultural Office (or Taipei Mission)

VISITOR HOLDING CHINESE PASSPORTS:

Chinese passport holders are recommended to submit the application as early as possible, in order to leave plenty of time to process the application.

Application information and forms are available at here.

Having filled out the required documents described above,

- Those residing abroad may contact the overseas Taipei Economic and Cultural Office (or Taipei Mission) for more information.
- Those residing in Hong Kong may contact Chung Hwa Travel Service, Hong Kong for more information.
- Those residing in Macao may contact the Taipei Economic and Cultural Center, Macau for more information.

Those residing in Mainland China may contact the Immigration Office in Taiwan through the help of the APNOMS 2011 Visa Service.

Note that the above information is subject to change, and will be updated if necessary. For more information, feel free to contact the APNOMS 2011 Visa Service(Miss Yen-Ju Chen, ciee@ms35.hinet.net); We will spare no effort to assist you in obtaining a visa.

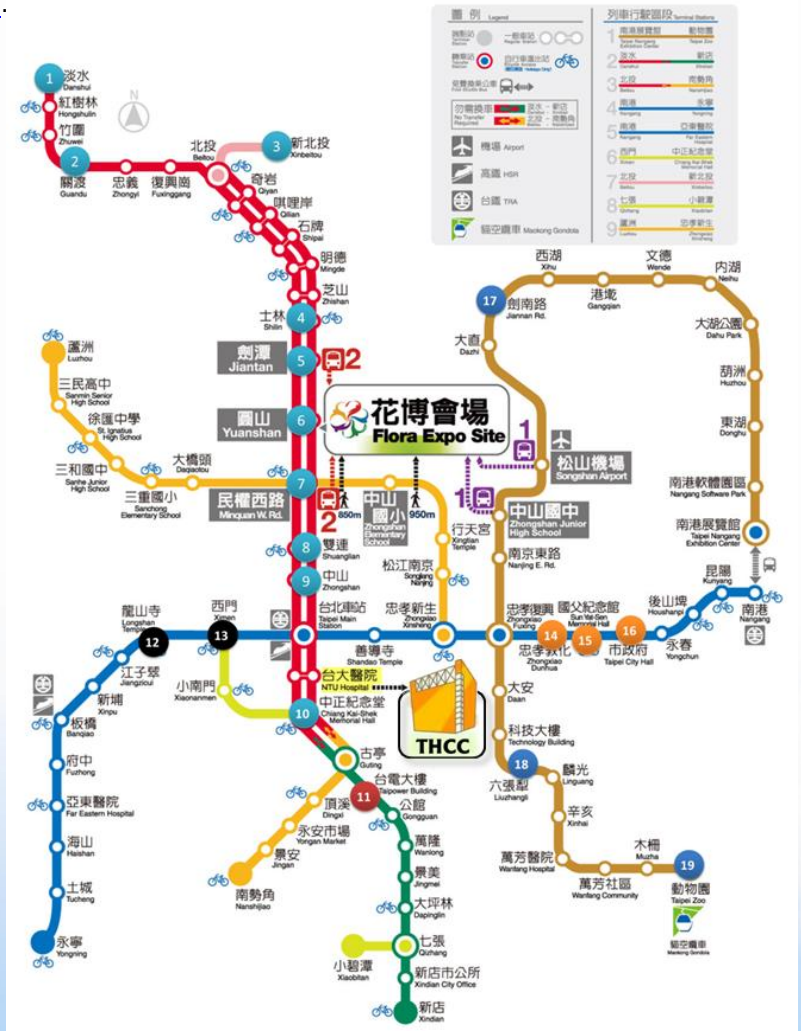
Travel Information

INTRODUCTION:

Taipei is a modern city and mixes with tradition. From the world's tallest building to the biggest collection of Chinese art, Taipei invites you into a world of fascinating contracts. Besides, there are many shopping malls, dozens of world-class restaurants and plenty of night markets. You can find many-faceted Taipei that will call you back again and again and make your most memorable trips to Asia.

TRAVELING BY MRT:

MRT in Taipei is very convenient. You can travel around the beautiful city all day by MRT. Here we list some of the hot spots that are famous scenic spots near the MRT station for your reference. For more information, please visit TAIPEITRAVEL.NET.



1. Fort San Domingo Fisherman's Wharf
2. Guandu Natural Park
3. Beitou Hot Spring Museum Xinbeitou Hot Springs
4. Shilin Night Market National Palace Museum
5. Yangmingshan Hot Springs
6. Taipei Fine Arts Museum Grand Hotel
7. Xingtian Temple
8. Dajia Wharf
9. SPOT-Taipei Film House
10. National Chiang Kai-shek Memorial Hall
11. Shida Night Market
12. Longshan Temple
13. Ximending The Red House
14. Pacific SOGO Department Store
15. Sun Yat-sen Memorial Hall CPCity Living Mall
16. Xinyi Shopping District Taipei 101 Mall Eslite Xinyi Store Shin Kong Mitsukoshi Xinyi New Life Square
17. Miramar Entertainment Park
18. Linjiang Street Night Market
19. Taipei Zoo Maokong Gondola

Transportation

GENERAL INFORMATION

APNOMS 2011 will be held in Taipei, Taiwan, an island that is situated in East Asia in the Western Pacific Ocean. The most scheduled international flights are served by Taiwan Taoyuan International Airport in nearby Taoyuan County, approximately 50 kilometers by car or bus to Taipei. Songshan Airport is at the heart of the Taipei serves mostly domestic flights, and the direct flights to Tokyo's Haneda Airport and JEJU International Airport in South Korea.

AIRPORT INFORMATION

- **Taiwan Taoyuan International Airport :**

Address	No. 9, Hangzhan S. Rd., Dayuan Township, Taoyuan, Taiwan 33758, R.O.C.
Service Counter	+886-3-398-2143 (T1 Departure Service Counter) +886-3-398-3274 (T2 Departure Service Counter)
Website	http://www.taoyuan-airport.com/english/index.jsp

- **Songshan Airport** :

Address	No. 340-9, Dunhua N. Rd., Songshan District, Taipei City 10548, Taiwan (R.O.C.)	
Service Counter	+886-2-8770-3460 (T1 Departure Service Counter) +886-2-2547-4576 (T2 Departure Service Counter)	
Website	http://www.tsa.gov.tw/	
International Flights	Tokyo HND airport	
Cross-strait Flights	Beijing PEK airport Changchun CGQ airport Changsha CSX airport Chengdu CTU airport Chongqing CKG airport Dalian DLC airport Fuzhou FOC airport Guangzhou CAN airport Guilin KWL airport Haikou HAK airport Hangzhou HGH airport Hefei HFE airport	Nanchang KHN airport Nanjing NKG airport Qingdao TAO airport Shanghai PVG airport Shanghai SHA airport Shenyang SHE airport Shenzhen SZX airport Tianjin TSN airport Wuhan WUH airport Xiamen XMN airport Xian XIY airport Zhengzhou CGO airport

GENERAL INFORMATION FOR AIRPORT TRANSPORTATION (Airport → Taipei)

- **Taiwan Taoyuan International Airport :**

Taiwan Taoyuan International Airport has a convenient transportation system. Visitors can take taxis, buses or Taiwan High Speed Rail to Taipei city. The transportation systems are summarized below:

Taxi	
Airport taxis queue outside the arrival halls of both Terminal1 and Terminal2.	
Fare	The charge is based on the meter plus a 50% surcharge. A typical taxi fare to Taipei is about NT$1,100.
Service Hours	24 hours a day.
Driving Distance	About 60 minutes to 70 minutes.

Transportation

Bus

There are several frequent bus services between Taiwan Taoyuan International Airport and destinations in Taipei, such as Kuo-Kuang Bus, Air bus, or Free Go Bus.

Ticket counters are located in the Arrival Passenger reception areas of both terminals, terminal 1 and terminal 2.

Fare	One-way fare varies from NT$110 to NT$140 per adult.
Driving Distance	About 60 minutes to 70 minutes.

For more information on bus service, please visit this website

Taiwan High Speed Rail

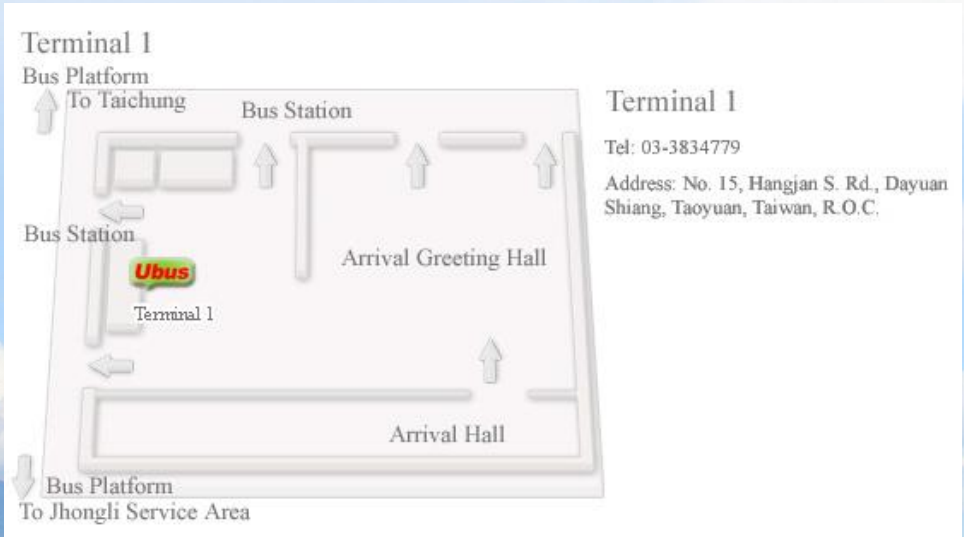
To get to Taipei by High Speed Train, you have to take a shuttle bus from the airport to the Taiwan High Speed Rail Taoyuan Station. Then, you can get off at the Taipei Main Station by Taiwan High Speed Rail.

Taiwan High Speed Rail Shuttle Bus

UBUS counter is in Arrival Greeting Hall. You can take the bus in terminal 1 and terminal 2.

TaoyuaTHSR Taoyuan Station to Taoyuan Airport Routes

Terminal 1



Transportation

Terminal 2

Terminal 2

Tel: 03-3833552

Address: No. 9, Hangjan S. Rd., Dayuan Shiang, Taoyuan, Taiwan, R.O.C.

Fare	Adult NT$30
Driving Distance	About 20 minutes to 30 minutes.

For more information on bus service, please visit this website.

Taiwan High Speed Rail

Fare	Adult NT$160

For more information on Taiwan High Speed Rail service, please visit this website.

Limousine Service

Fare	Cost of limousine service differs for each hotel, please contact your reserved hotel to ask the prices.

- **Taipei Songshan Airport :**

The Taipei Songshan Airport is in the Songshan District, Taipei city. It is accessible by the Taipei Metro Neihu Lin. The transportation is very convenient.

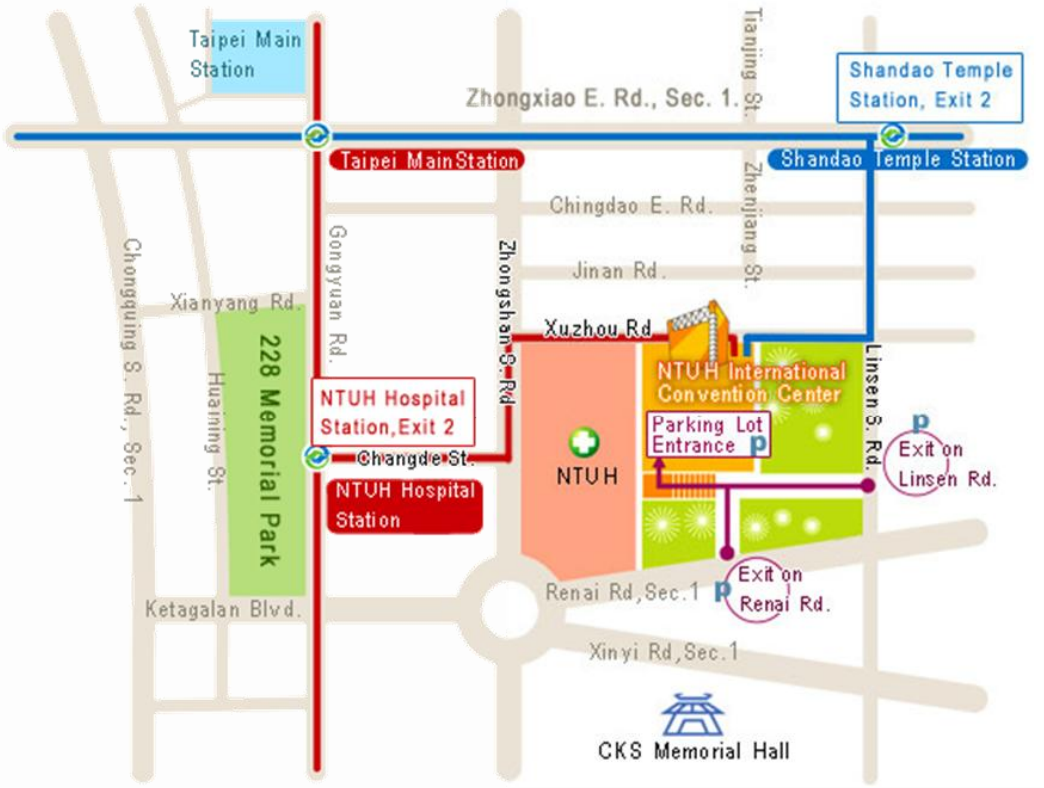
LOCAL TRANSPORTATION SYSTEM

Transportation in Taipei is well developed. Visitors can travel the city easily by buses, taxis or Mass Rapid Transportation System. NTUH International Convention Center (THCC) is located at the heart district of Taipei city. It only takes five-minutes to drive to Taipei Main Station, 20 minutes to Songshan Airport. In addition, MRT stations (red line: NTU Hospital Station; blue line: Shandao Temple Station) can be reached within approximately a 10-minute walk. The more traffic information as below:

Transportation

- **MRT(Mass Rapid Transportation) :**

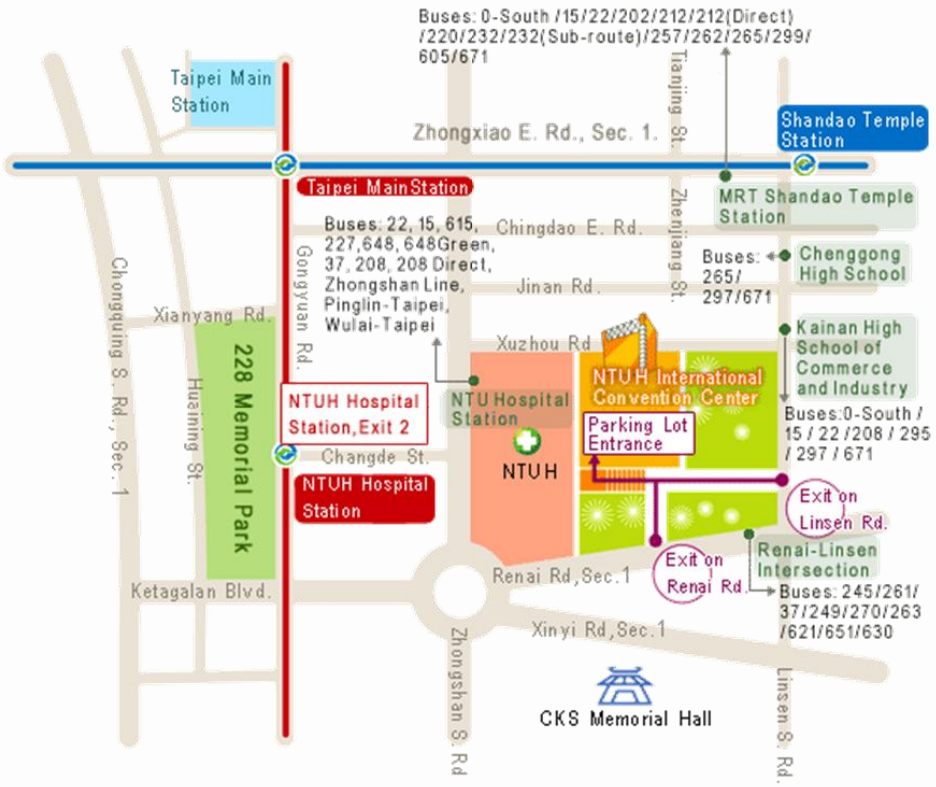
- The red line (Danshui / Beitou): get off at NTU Hospital Station, Exit 2
- The blue line: get off at Shandao Temple Station, Exit 2



- **Bus :**

- " MRT Shandao Temple Station": 0-South / 15 / 22 / 202 / 212 / 212 (Direct) / 220 / 232 / 232 (Sub-route) / 257 / 262 / 265 / 299 / 605 / 671
- "Chenggong High School" (Jinan-Linsen South Road Intersection): 265 / 297 / 671
- "Kainan High School of Commerce and Industry "(near Xuzhou Road): 0-South / 15 / 22 / 208 / 295 / 297 / 671
- "NTUH Hospital Station":22, 15, 615,227,648, 648Green, 37, 208, 208 Direct,Zhongshan Line, Pinglin-Taipei, Wulai-Taipei
- "Renai-Linsen Intersection"(Linsen South Road):295 / 297 / 15 / 22 / 671
  "Renai-Linsen Intersection"(Renai Road):245/261/37/249/270/263/621/651/630

Transportation



- **Taxi :**

- Please tell taxi drivers to National Taiwan University Hospital International Convention Center.
- Please download and print the Taxi Instruction Cards. You could use these cards to show your destinations to taxi drivers.

TAXI INSTRUCTION CARDS

Not all taxi drivers in Taipei speak very good English. Please download and print the Chinese-English instruction cards below so you may use them when needed.

If you need the Taxi Instruction Cards, please click the figure below to download.

Venue Information

Introduction

The THCC is built by National Taiwan University Hospital and operated by an expert firm to provide professional convention organization, high quality and high efficiency services. The 11 story glass curtain wall building is located at the heart district of Taipei city where many government Yuans and institutions also lain. You won't see busy streets or noisy crowds around the convention center. Instead, flourishing trees and refreshing breeze will greet you anytime you want to take a short break. The facilities provided is capable of fulfilling most of your needs. And no charge Wifi hot spots are ready during the symposium to keep you connected to the world.

Want to try some local food or beverage? There are many teahouses, Chinese food restaurants and convenience stores in the nearby streets. Also there is a "Youth center" that provides various games such as skating and rock climbing to fill up your leisure hours. Take the map below with you and discover the attractions and wonders in the city.

Venue Information

Traffic Information

You can go to the convention center by MRT, bus or even on foot! It's only about 10 minutes of walk from the nearby MRT station/bus stops or hotels. The picture below displays the regional map of THCC. For detailed traffic information, please visit here or our Transportation Info page.

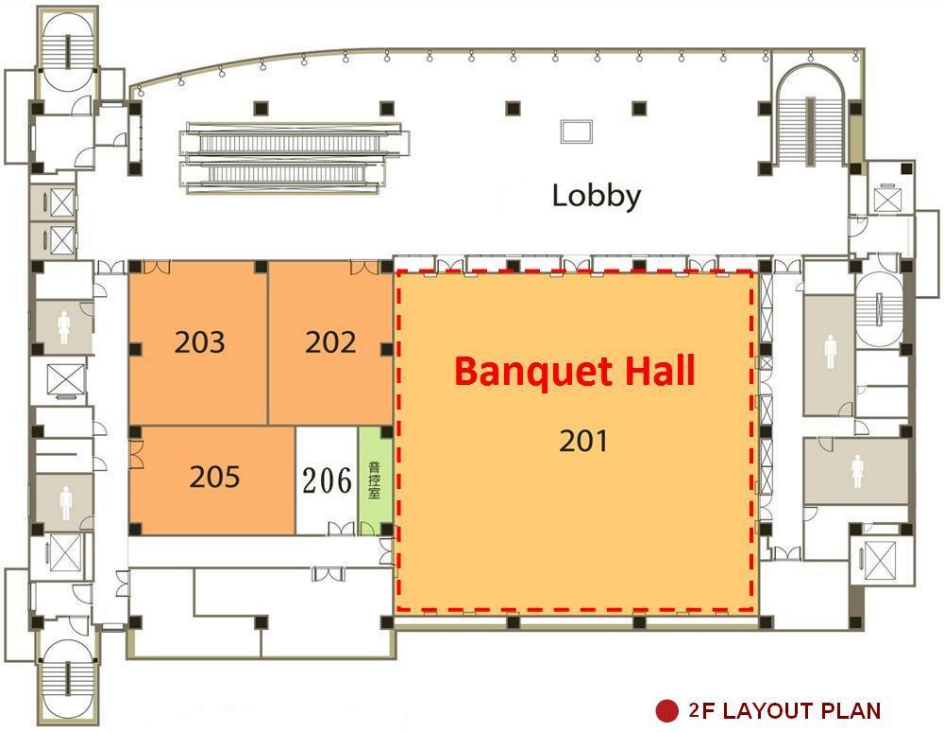
The neighboring street scene of THCC is available on Google Map. We list the coordinates of several significant landmarks and MRT stations below. You can input the coordinate in Google Map, utilize its navigation function and find your way!

- The venue, THCC : (25.041269,121.521))
- MRT NTU Hospital Station Exit 2 : (25.041,121.516)
- MRT Shandao Temple Station Exit 2 : (25.0448,121.5228)
- Bus stop "NTU Hospital" : (25.041565,121.518559)
- Bus stop "Renai Linsen Intersection" : (25.038891,121.521244)
- Bus stop "Kainai High School of Industry" : (25.041561,121.52228)

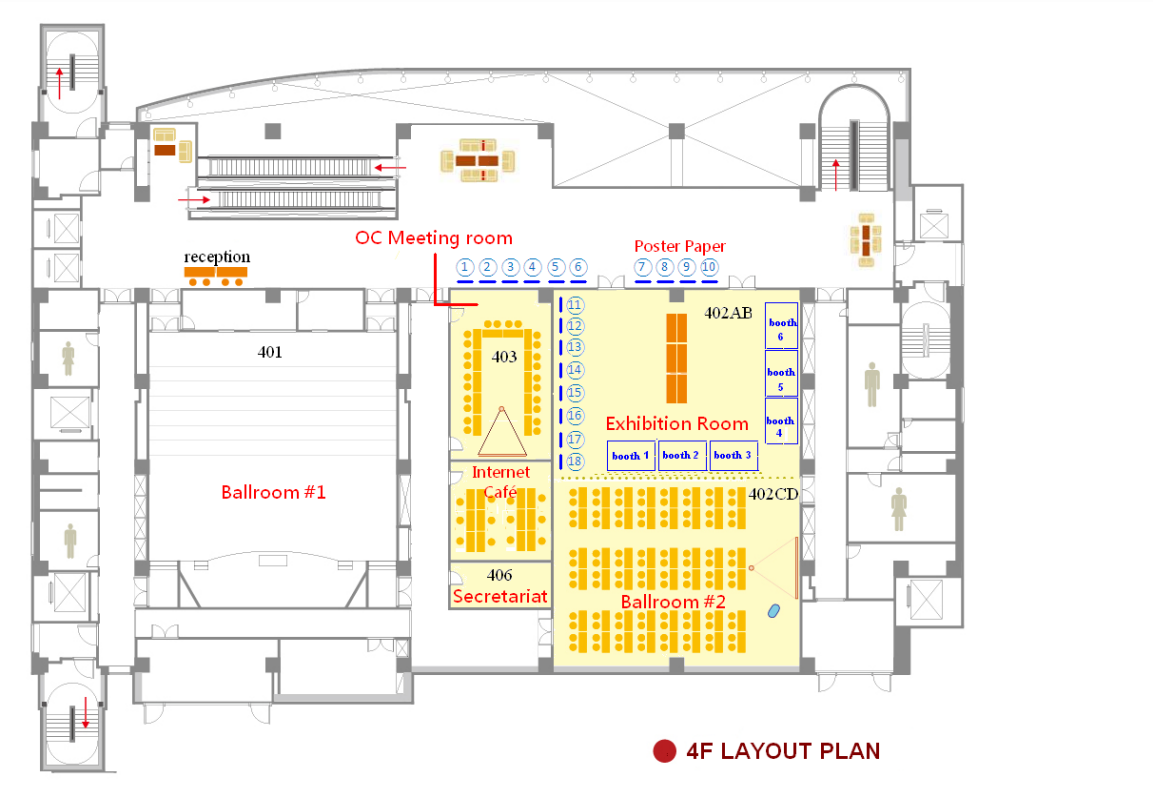
Venue Information

Floor Plan

- **2F**
  The banquet on Sep.22 a.k.a the 3rd day of the symposium will be held at 2F (Temporary)



- **4F**
  Most of the meetings and activities are held at this floor



Internet Café

Internet Café

For the convenience of APNOMS 2011 attendees, Internet café will be provided at #405. Wireless Internet access is available. You can refer the Wireless AP's name and password in the back of your badge or ask our staffs at the registration desk for help.

OC Meeting Room

OC Meeting Room

Organizing Committee meeting room is located at #403. Scheduled OC meetings and other committee meetings will be held at this OC meeting room. For the rest time slots, OC meeting room will be open to all attendees to take a break.

Memo

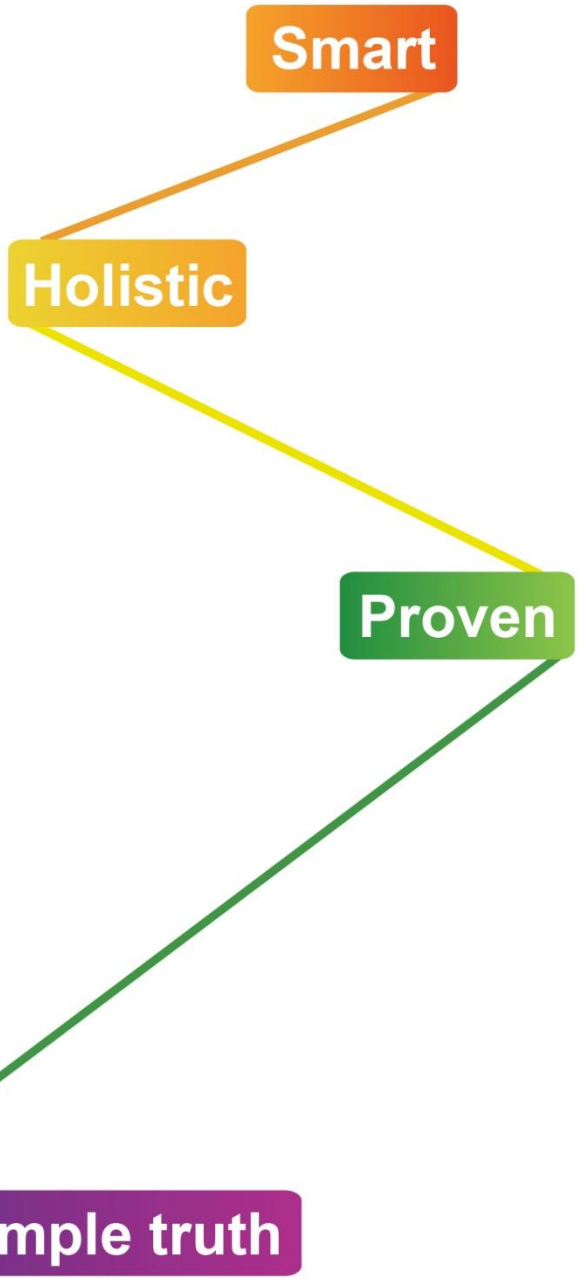
Memo

Memo

We know there's more to meeting demand than adding bandwidth... it's about being smart with how you us it.

We know there's more to delivering a unique customer experience than the latest technology… it's about looking at the bigger picture.

We know that there's more to transforming your business than just big ideas…it's about a proven track record.



That's the simple truth

To find out why being smart, hotlistic and proven matters, visit www.nokiasiemensnetworks.com

Nokia Siemens Networks

APNOMS 2011

The 13th Asia-Pacific Network Operations and Management Symposium