

Final Program

The 11th Asia-Pacific Network Operations & Management Symposium

***Challenges for Next Generation Network Operations and
Service Management***

APNOMS 2008

Oct 22-24 2008

Beijing China

Park Plaza Beijing Science Park

Sponsored by KICS KNOM, IEICE ICM

Technically Co-Sponsored by IEEE Communications Society

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Welcome to APNOMS 2008

The 11th Asia-Pacific Network Operations and Management Symposium
22 - 24 October 2008
Park Plaza Beijing Science Park
Beijing, China

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Technically Co-Sponsored by IEEE Communications Society
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Challenges for Next Generation Network Operations and Service Management

You are cordially invited to join us at APNOMS 2008 at Park Plaza Beijing Science Park, Beijing, China. This is the 11th 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), and APNOMS 2007 (Sapporo). APNOMS 2008 is building on the success of previous APNOMS, the premier technical symposium in the area of network/service operations and management in the Asia-Pacific region. This is the very first time that APNOMS is being held in China.

Research and development on Next Generation Networks (NGNs) have been carried out over the last few years and we are already seeing their deployment and operations in many parts of Asia-Pacific countries. We are also beginning to experience new and interesting services that utilize these NGNs. We are certain that we will see more deployment of NGNs and NGN services in the next few years. Thus, the operations and management of NGNs and their services are very important to the network operators and service providers. At the same time, they are also concerned about new and more effective ways of performing the operations and management. The Organizing Committee has timely selected "**Challenges for Next Generation Network Operations and Service Management**" as the theme of APNOMS 2008 and has prepared an excellent 3-full day program with keynotes, tutorials, special sessions, panels, technical sessions, poster sessions, and exhibitions with the theme in mind. This year we have received over 200 submissions of technical paper and we are certain that the selected 48 technical papers will be of high-quality on the latest hot topics in next generation network operations and service management.

On behalf of the Organizing Committee, we would like to extend a warm welcome to all the participants to APNOMS 2008. The APNOMS 2008 venue, Park Plaza Beijing Science Park, is located in the university/science district of Beijing, very close to the 2008 Summer Olympic Stadium. Beijing is the home to the many of the world's most revered treasures, such as The Great Wall, Forbidden City, Temple of Heaven, and Ming Tombs. We sincerely hope that all of you will help make this symposium the most productive and useful with lots of fruitful discussions with other participants. We also hope that you discover and enjoy many things that Beijing and the other parts of China can offer before or after the symposium.

Finally, we would like to sincerely thank all contributors to this symposium, without whom this symposium would not have been possible. We would also like to thank all committee members, who put their endless time and effort in preparing for the success of this symposium.



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Keynotes

Keynote 1: Wed., Oct. 22, 2008, 13:25-13:55, TGB 2& 3

Title: Issues on Internet Architecture



Hualin Qian (China Academy of Sciences, China)

Prof. Qian has over 40 years of experience in the computing industry and has been responsible for many of the major technology projects in China. He has made important contributions to bringing the Internet to China since 1989, and finished the initial Internet connection in 1994. That same year, he finished the construction and operation of China's top-level domain (.cn). His team developed the first X.25 network in China in 1984. As a chief designer, he finished the design of the computer network system for the 11th Asia Games 1990. He currently serves as deputy director of the CNNIC Steering Committee, deputy chair of the board of Internet Society of China, chief scientist of the Computer Network Information Center, Chinese Academy of Sciences. His current research interest is on the Internet architecture.

Keynote 2: Thu., Oct. 23, 2008, 09:00-09:30, TGB 2& 3

Title: A Key to Survive: Service-oriented Operation and Management for Accelerating Business Transformation



Tae Il Park (KT, Korea)

Tae Il Park is a Senior Vice President and the Head of Network Management Business Unit in KT. He received his B.S. and M.S. degrees from Hanyang Univ. in 1979 and KAIST in 1982, respectively. He has worked over 31 years at KT, developing new markets of Russia and China, leading development of NGN technologies in Korea and successfully realizing New Generation Operations Systems and Software (NeOSS) in KT. During 2004-2005, he led a key project in KT realizing NGN technologies and services, which included the development of soft-switches, network services based on Internet, and broadband personal devices. Since 2005, he has been focusing on stable network operations and management and service quality innovation. He is currently concerned about creating new services and business models for accelerating growth and keeps his mind on developing marketing support solutions.

Keynote 3: Thu., Oct. 23, 2008, 09:30-10:00, TGB 2& 3

Towards New-Generation Networks: Japanese Approach



Masayuki Murata (Osaka University, Japan)

Masayuki Murata received the M.E. and D.E. degrees in Information and Computer Science from Osaka Univ., Japan, in 1984 and 1988, respectively. In 1984, he joined Tokyo Research Lab., IBM Japan, as a Researcher. From Sept. 1987 to Jan. 1989, he was an Assistant Professor with Computation Center, Osaka Univ. In Feb. 1989, he moved to the Dept. of Information and Computer Sciences, Faculty of Engineering Science, Osaka Univ. In April 1999, he became a Professor of Cybermedia Center, Osaka Univ., and is now with Graduate School of Information Science and Technology, Osaka Univ. since April 2004. He has more than four hundred papers of international and domestic journals and conferences. His research interests include computer communication networks, performance modeling and evaluation. He is a member of IEEE, ACM and IEICE.

Keynote 4: Fri., Oct. 24, 2008, 09:00-09:30, TGB 2& 3

Current and Upcoming Development in Network Technology



Lintao Jiang (China Academy of Telecommunication Research, China)

Mr. Lintao Jiang is CTO, China Academy of Telecommunication Research (CATR) of the Ministry of Information Industry Technology (MIIT) of China. He also serves as Chairman of IP & Multi-media Technical Committee of China Communications Standardization Association, and Vice Chairman of ITU-T SG 13. Mr. Lintao Jiang graduated from the Radio & Electronics Department of Tsinghua University in 1970, and received M.E. from the Electronics Engineering Department of Tsinghua University in 1982. He has been engaged in R&D of multi-media, digital communications, IP technology and standardization for many years. He is member of the 1st, 2nd and 3rd session of Multi-media Expert Group of Communication Technology Area, High-Tech R&D Program of China (863 Program).

Distinguished Experts Panel

DEP Session: Fri., Oct. 24, 2008, 15:40 - 17:45, TGB 2& 3

Panel Chair



Qiliang Zhu (BUPT, China)

Qiliang Zhu is the professor of BUPT and the supervisor of doctor-degree students. He is also the CTO of Network Operation & Maintenance Committee of China Communication Enterprise Association (CCEA). Graduating from Moscow Institute of Telecommunications (master degree), Professor Zhu joined Beijing University of Posts and Telecoms (BUPT). He teaches various courses subject to computer languages, database design, software application design, informatization of enterprises operations, etc. He manages NGOSS research lab to carrying out a lots of research projects. Professor Zhu has 10 years world experience, including 3 years research work in Bellgium ALCOTEL lab in 1984-1987. He was dispatched by China Ministry of Posts & Telecoms to join the team for setting up the first join-venture Shanghai Bell Telephone Manufactory Co. in 1984-1989. Prof. Zhu was the General Director of Beijing International Telecom Development & Training Center in 1989-1994. He was the General Director of BUPT-Notel Research Center in 1994-1999. He also was the General Director of Honzhi Telecom Research Institute in 2000-2002. He was actively involved in TMF activities since 2003 and he was the first speaker from China at TMW event.

Panelists



Gang Chen (China Mobile Group Shanxi, China)

Gang Chen is the General Manager of IT Plan & Development Center of China Mobile Group Shanxi Co., Ltd. In charge of building the company's IT strategy, policy, infrastructure, large scale application architecture including DSS/BSS/OSS/CRM/NMS etc., IT related budgeting is part of his major work. Gang has over 28 years of experience in the Information Technology and Management field. He was the IT director of Softbank China Venture Capital before joining China Mobile. Gang received his education in US, and worked for large US firms 10 years before coming back China in 2000. He is interested in both technology and business processes in the Telecommunications IT market. He also has broad communication with local and oversea senior industry leaders. Gang is also an adjunct professor at Peking University.



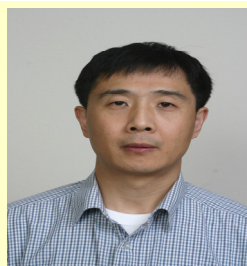
John Strassner (Motorola Labs, USA)

John Strassner is a Motorola Fellow and Vice President of Autonomic Research at Motorola Labs, where he is responsible for directing Motorola's efforts in autonomic computing and networking, policy management, and knowledge engineering. He is also an associate professor at the Waterford Institute of Technology in Waterford, Ireland. John is active in both forging partnerships (especially with academia) and international standards, where he is the Chairman of the Autonomic Communications Forum and the working group chair for P1900.5, which works on policy languages and architectures for dynamic spectrum access (part of IEEE SCC 41). Previously, John was the Chief Strategy Officer for Intelliden and a former Cisco Fellow. John invented DEN (Directory Enabled Networks) and DEN-ng as a new paradigm for managing and provisioning networks and networked applications. He is also the past chair of the TMF's NGOSS SID, metamodel and policy working groups. He has authored two books (Directory Enabled Networks and Policy Based Network Management), written chapters for 4 other books, and has been co-editor of five journals dedicated to network and service management and autonomics. John is the recipient of the Daniel A. Stokesbury memorial award for excellence in network management, is a member of the Industry Advisory Board for both University of California Davis and DePaul University, a TMF Fellow, and has authored over 195 refereed journal papers and publications.



Doug Zuckerman (Telcordia, USA)

Douglas N. Zuckerman received his B.S., M.S. and Eng.Sc.D degrees in Electrical Engineering from Columbia University in 1969, 1971 and 1976, and is an IEEE Fellow. His over 39 years of experience, mainly at Bell Labs and Telcordia Technologies, span the operations, management and engineering of emerging networks and services. He is currently the IEEE Communications Society's President. His technical career included long-haul millimeter waveguide studies (before fiber), satellite systems engineering, maintenance engineering for the world's first digital transmission networks, business services operations planning, and most recently IP-centric optical network interoperability. He was an early contributor to TMN standards and currently chairs the Optical Internetworking Forum's OAM&P Working Group. For over 24 years, Doug's leadership across ComSoc's technical committees, conferences, publications, chapters and Society governance has maintained focus on member interests worldwide, especially making relevant technical information widely and quickly available on line and in conferences, and encouraging more member interaction in the technical committees. He co-founded technical committees on Network Operations & Management and Enterprise Networking, as well as the IEEE Network Operations & Management Symposium (NOMS). His sustained contributions were recognized through the Salah Aidarous Memorial Award, the Society's Donald McLellan Meritorious Service Award, its Conference Achievement Award and the IEEE Third Millennium Medal.



Xingchen Lu (Textronix Communications, China)

Xingchen Lu is the head of Network Management Development Center of Tektronix Communications, China. He received B.E. degree in Wireless Communication Engineering from Beijing University of Posts and Telecommunications, China, and M.S. degree in Computer Sciences from University of Texas at Dallas, USA. He is also getting his Executive MBA degree from University of Texas at Arlington, USA. Mr. Lu has extensive experiences in the telecommunication industry including R&D experience with Nortel Networks and Lucent Technologies. In Tektronix Communications, his main focus has been in the network monitoring and testing product research and development, especially in the network assurance and customer assurance areas.



Masayoshi Ejiri (Studio IT, Japan)

Dr. Masayoshi Ejiri began his professional career in 1967 at NTT, the year he graduated from the University of Tokyo. He engaged in various business areas in NTT, including transmission systems development, nation-wide network planning and management and director of telephone office. Last five years in NTT, he had been an executive manager responsible for strategic planning of service/network operations as well as management systems development. He also had been involved in CCITT (now ITU-T) activities and deeply involved in TMN standardization from the beginning. In 1995 he joined Fujitsu Ltd and has been responsible for directing the telecommunications management business strategy and technology in Fujitsu groups as Vice President and Chief Scientist of Network Systems Group. Dr. Ejiri has been a regular writer and invited speaker on telecommunications management issues for technical journals and conferences. He also has been serving international symposia and conferences as general co-chair of NOMS'96 and NONS2004, organizing committee member in many international symposia/conferences, guest editor of international journals and so on. He co-founded the APNOMS in 1997 and has been leading its activities. He was the chair of IEEE ComSoc Enterprise Networking Technical Committee in 2000-2002. He was a Board member of TMF. In IEICE Japan, he initiated and chaired TM (Telecommunications Management) Committee. Ejiri received his M.S. and Ph.D. degree from University of Tokyo and he is IEICE Fellow. Dr. Ejiri was retired from Fujitsu in 2007 and he has been working for POSTECH in Korea as BK21 research professor for 6 months in 2008.

Special Sessions

Session 1: Emerging Issues in China (Thur., Oct. 23, 2008, 13:35~15:40, TGB 3)

Session Chair: Subin Shen, NUPT, China

NGN OSS Requirements



Ping Zhao (China Telecom, China)

Mr. Zhao Ping has more than 10 years working experience in China Telecom Guangzhou Research Institute. He is focusing on telecom service and network management & operation as an OSS expert and principal strategist. He is responsible with total R&D strategies in Guangzhou Research Institute and oversees OSS projects. Meanwhile he is leading a team to develop IPTV management in CCSA and also working as a rapporteur to study telecom management principle and architecture in ITU-T SG4. He has very good understanding about value chain and business processes in Chinese telecom industry and get involved in lots of international activities and SDOs.

Pilot NGN Project and Management Strategy in China Mobile



Yewen Li (China Mobile, China)

Yewen Li works in China Mobile headquarters, network department, OSS division. He received his Ph.D degree from Beijing University of Posts & Telecommunications. He has nearly 14 years industry working experiences. Dr. Li has been involved in 3GPP SA5 to develop 3G UTRAN standards for almost 6 years. He was nominated as SA5 Vice chairman for 2 terms, 4 years standing for China Mobile. Now, Dr. Li is the Deputy Director of China Mobile OSS division in Beijing headquarters. He is in charge of China Mobile 2G/3G and NGN OSS standardization, OSS architecture, OSS software design, OSS deployment and OSS maintenance.

Challenges and Opportunities of Service Management in Telco Web 2.0 Era



James Yang (UT Starcom, China)

Jing Yang is Chief Scientist and Chief Architect of UT Starcom and Professor and PhD Supervisor of the graduate school of Research Institute of Computing Technology of China Science Academy. After graduating from NUPT in 1985 and INT in 1988, he worked with NUPT and devoted himself in the modeling, design and implementation of network, service and business management of telecommunication networks. He has worked for the architecture and technology of the service and its management on IP infrastructure and distributed computing environment since he joined UT Starcom in 1998 after two years study on the protection and restoration across multilayer network management in France. Currently, his research focuses on the business model, architecture and technologies of video service, multimedia steamed service and service management with network optimization on Telco Web 2.0 networks.

Overview of ITU-T SG4 Work on Network Management



Zhi-Li Wang (BUPT, China)

Zhi-Li Wang received the BS from XiDian Univ. and MS and PhD degrees from BUPT. He joined Network Management Research Center of BUPT since 2005 as a lecturer. His research interest includes Network Management and Communication Software. He is the Rapporteur of Question 10 of ITU-T SG4 since 2006, responsible for application-specific network management information models. He is a co-editor of eight ITU-T Recommendations. Zhi-Li participated in the following projects: (1) CORBA interface testing system, (2) 3rd Generation Mobile Communication Network Management Standardization, and (3) Flow-based Modeling Theories and Information Model for the Network Management of Connectionless Networks.

Session 2: International Emerging Issues (Fri., Oct. 24, 2008, 10:00~12:05, TGB 3)

Session Chair: Makoto Takano, NTT West, Japan

Holistic Approach to Define Service Quality Indicators and Develop ISQM System



Hyunmin Lim (KT, Korea)

Hyun Min Lim is a senior researcher in the Service Quality Management Team at KT Network Technology Laboratory. He received BS and MS Degrees in Electronic Engineering from Hanyang University, Seoul, Korea in 1986 and 1988, respectively. He has been working for KT since 1988 and involved in various projects including developing Electronic Switching System, Fiber Loop Carrier System, Service Assurance Support System and Facility Management System. Now, he is in charge of developing an Integrated Service Quality Management System.

New Value Chain through Service Platform



Ryozo Ito (HP Japan, Japan)

Ryozo Ito is a Senior Executive Consultant in Communications, Media and Entertainment business, Hewlett-Packard Japan. He received M.S. degree in Electronics Engineering from Osaka University, Japan in 1978. He joined NEC, Japan and developed transmission and management systems. Then he joined Tandem Computers and developed Intelligent Network, Value Added Service Nodes and BSS systems. Since 2002, he has been providing technical and business consultation specializing in network services, IMS&NGN, BSS systems and future businesses for mobile and fixed line operators.

Lessons learnt from the Beijing Olympic Games Website Measurement



Rocky Chang (The Hong Kong Polytechnic University, China)

Rocky is an Associate Professor at the Department of Computing of The Hong Kong Polytechnic University. Prior to returning to Hong Kong, he received his post-doctoral training at the Computer Science Department of the IBM Thomas J. Watson Research Center. He received his PhD and MSc from the Rensselaer Polytechnic Institute and undergraduate education from Virginia Tech. He is leading an Internet Infrastructure and Security Group, addressing network security, network measurement, network operations and management, and theory of queue stability. The Group has published their findings in top conferences, such as IMC, NDSS, DSN, ESORICS, and NOMS

Operations Support for IPTV Service Assurance - Practical Experience and Lessons Learned



Chung-Hua Hu (Chunghwa Telecom, Chinese Taipei)

Chung-Hua Hu received his B.S., M.S., and Ph.D. degrees in Computer Science and Information Engineering from National Chiao-Tung University, Taiwan in 1992, 1994, and 1998, respectively. Now he works for Chunghwa Telecom Laboratories, and has rich experience in developing a large-scale broadband network management system for Chunghwa Telecom. His current research interests include NGOSS (New Generation Operations Systems and Software) methodology and development, multi-technology network management.

Program at a Glance

Wednesday, 22 October 2008			
	Tianhong Grand Ballroom 2	Tianhong Grand Ballroom 3	TGB 1
09:00 - 10:30	Tutorial 1 IPTV Service Assurance Vision	Tutorial 2 Integrated All-IP Network Architecture and Mgmt Technology of FMBC Services for NGN	Exhibit Preparation
10:30 - 10:45	Coffee Break		
10:45 - 12:15	Tutorial 3 Customer-Centric Service Convergence	Tutorial 4 Building Next Generation Networks Using Autonomic Mechanisms: Theory and Practice	
12:15 - 13:15	Lunch		
13:15 - 13:55	Welcoming Address: James Hong & Luoming Meng Opening Remarks: Doug Zuckerman (IEEE Comsoc President) & Deqiang Zhou (Chairman of CIC) Keynote Speech 1 - Hualin Qian (China Academy of Sciences, China)		
13:55 - 14:10	Break		Exhibit Demos
14:10 - 16:15	Technical Session 1 Routing and Topology Management	Technical Session 2 Fault Management	
16:15 - 16:45	Coffee Break		
16:45 - 18:25	Technical Session 3 Community and Virtual Group Management	Technical Session 4 Autonomous and Distributed Control	
18:30 - 20:00	Welcome Reception (TGB 1)		

Thursday, 23 October 2008				
09:00 - 10:00	Keynote Speech 2 - Tae Il Park (KT, Korea) Keynote Speech 3 - Masayuki Murata (Osaka University, Japan)			
10:00 - 10:30	Coffee Break			
10:30 - 12:35	Technical Session 5 Sensor Network Management	Technical Session 6 Traffic Identification		Exhibit Demos
12:35 - 13:35	Lunch			
13:35 - 15:40	Technical Session 7 QoS Management	Special Session 1 Emerging Issues in China		
15:40 - 16:10	Coffee Break		Short Paper Session 1	
16:10 - 18:15	Technical Session 8 Policy and Service Management	Innovation Session 1		
19:00 - 21:00	Symposium Banquet (Da Zhai Men Seafood Garden)			

Friday, 24 October 2008				
09:00 - 09:30	Keynote Speech 4 - Lintao Jiang (China Academy of Telecommunication Research, China)			
09:30 - 10:00	Coffee Break			
10:00 - 12:05	Technical Session 9 Wireless and Mobile Network Management	Special Session 2 International Emerging Issues		Exhibit Demos
12:05 - 13:05	Lunch			
13:05 - 15:10	Technical Session 10 Security Management	Innovation Session 2	Short Paper Session 2	
15:10 - 15:40	Coffee Break			
15:40 - 17:45	Distinguished Experts Panel (TGB 2 & 3)			
17:45 - 18:00	Closing Remarks			

- TGB: Tianhong Grand Ballroom
- WLAN access will be available throughout the symposium area and Internet Café will be set up in TGB 1.
- Registration Hours:

Tue., Oct. 21	19:00 - 21:00
Wed., Oct. 22	08:00 - 17:00
Thu., Oct. 23	08:00 - 17:00
Fri., Oct. 24	08:00 - 12:00

Tutorials

Tutorial 1: IPTV Service Assurance Vision (Wed. Oct. 22, 2008, 9:00~10:30, TGB 2)



Charlie Yang (AT&T, USA)

Streaming video transported by packet switched networks (IPTV) is an emerging technology and requires ongoing attention to the evolving landscape of vendor solutions and standards to ensure overall service quality and customer satisfaction. Unlike voice and data, there is almost zero tolerance for poor or “spotty” video service. Because consumer tolerance for poor quality video service is very low and the highly competitive IPTV market, and magnitude of failure to deploy IPTV so high for the service provider, IPTV Service Assurance plan must be considered top priority. However, network outages do occur due to a variety of reasons with possible lengthy downtimes. Therefore, it has become increasingly important to develop systematic approach to isolate troubles very quickly, correctly resolve all problems, and then return the customer back to service with minimal “down time”. The purpose of IPTV Service Assurance Vision is to provide operations strategies necessary for a successful IPTV offering and high-quality customer experience. This tutorial will cover major aspects of the video transport operations planning from a business, network service, architecture, and operations system platforms perspective. It will discuss example implementations, case studies, and practical guidance.

LEVEL: Introductory to Intermediate

Tutorial 2: Integrated All-IP Network Architecture and Management Technology of FMBC Services for NGN (Wed. Oct. 22, 2008, 9:00~10:30, TGB 3)



Masatoshi SUZUKI (KDDI R&D Laboratories)

Integrated All-IP network architecture supports the capability to provide mobility within and between its various access network types and mobility technologies. IP communications which include broadcasts are expanding widely into a variety of infrastructures based on fixed networks as well as mobile networks. In such an environment, it is a crucial issue to realize schemes for maintaining the real end-to-end high-quality FMBC (Fixed Mobile & Broadcast Convergence) services between the NGN terminals considering the performance requirements. Furthermore, performance requirements might diversify based on the end-user perception of the application-specific quality known as QoE (Quality of Experience) or a conscious decision on the part of the end-user considering the environment in which the NGN terminal is used. In this tutorial, key technologies for integrated all-IP network architecture, such as the core /access network control, automatic configurations and GMPLS based IP networks, are provided. And technologies for improving the environments of FMBC services which include network & service resource control for the end-to-end quality management and mobility management are presented. Furthermore, for example, a practical study using a CJK (China-Japan-Korea) test-bed is also shown.

LEVEL: Introductory to Intermediate

Tutorial 3: Customer-Centric Service Convergence (Wed. Oct. 22, 2008, 10:45~12:15, TGB 2)



Qiliang Zhu (BUPT, China)

One of the challenges the Information/Telecom operators are facing for NGN and its service management is how to converge their services, networks and terminals, providing more attractive products and/or services to keep the customer's retention and loyalty. To deal with this, the tutorial provides broad views of the problem solving, which includes the related concepts of customer, value network and the quality of customer experience, as well as the technical aspects, such as the standards and architecture for building the value-added service delivery platform. The tutorial is structured into four parts. First, a basic concept of '3C' and evolutionary way of the convergence is given. Second, a new role of customer and the quality of customer experience are introduced. Third, a brief introduction of ITU-T, ETSI, 3GPP and TMF used for building value-added service (VAS) platform is discussed. Last, a functional architecture with the scenario and the interaction between VAS platform and BSS/OSS/OCS with some message flows are provided.

LEVEL: Introductory to Intermediate

Tutorial 4: Building Next Generation Networks Using Autonomic Mechanisms: Theory and Practice (Wed. Oct. 22, 2008, 10:45~12:15, TGB 3)



John Strassner (Motorola Labs, USA)

Autonomic technologies are unique, in that they are used to represent business as well as technical concepts. This tutorial will use examples from the FOCAL autonomic architecture, which was designed to manage the increasing business, system, and technical complexity of computing systems by enabling changing user needs, business objectives, and environmental conditions to drive the resources and services produced by a network at any given time. This tutorial uses a novel autonomic architecture, called FOCAL, to illustrate the complexities in managing wired and wireless networks, and provides the tutorial participant with a relatively deep understanding of the source of these problems and a variety of tools that can be used to solve these problems, including information and data models, ontologies, and policy management. This tutorial is divided into three sections. The first section describes the most important concepts and technologies from autonomic computing and networking that can be used to build and manage next generation networks and services. Topics from this section are then applied to the challenges of building and managing next generation networks and services and include, but are not limited to, harmonizing information and translating between the different languages and management methods used by different devices, the use of a novel context-aware policy management approach to enable the services and resources of a network to change to accommodate varying user needs and business demands, and how to orchestrate the behavior of network services using model-driven code generation as well as machine-based learning and reasoning mechanisms. The final section builds on the first two sections and provides examples, a demonstration, and experimental results that show how next generation networks can be built and managed using autonomic principles

LEVEL: Introductory to Intermediate

Technical Sessions

1 Wed, Oct. 22, 2008, 14:10~16:15 (TGB 2) **Routing and Topology Management** Chair: Jiahai Yang (Tsinghua Univ., China)

1-1 E-Scheme in Delay-Tolerant Networks

ZhiTing Lin, YuGui Qu, QingHua Wang, Baohua Zhao (University of Science and Technology of China, China)

1-2 Layer 1 VPN NMS based on Each VPN Customer

Hiroshi Matsuura, Naotaka Morita (NTT, Japan)

1-3 Algorithms to Managing Unicast, Multicast and Broadcast Transmission for Optical Switches

Dawid Zydek (University of Nevada, USA), Leszek Koszalka, Iwona Pozniak-Koszalka (Wroclaw University of Technology, Poland), Keith J. Brunham (Conventry University, UK)

1-4 Network Planning and Adaptive Routing for Multimedia Traffic

Priscila Barreto, Paulo H. P. de Carvalho, Rafael Dias Oliveira, Maximiliano Prestes Ceppo (U. of Brasilia, Brazil)

2 Wed, Oct. 22, 2008, 14:10~16:15 (TGB 3) **Fault Management** Chair: Hong-Taek Ju (Keimyung Univ., Korea)

2-1 Network-Wide Rollback Schemes for Recovery from Operator Errors toward Dependable Network

Daisuke Arai, Kiyohito Yoshihara, Akira Idoue (KDDI R&D Laboratories, Japan)

2-2 An Efficient Failure Recovery Scheme for Next Generation Network Services based on Distributed Components

Wataru Miyazaki, Kazuhiko Kinoshita (Osaka University, Japan), Hideki Tode (Osaka Prefecture University, Japan), Koso Murakami (Osaka University, Japan), Shinji Kikuchi, Satoshi Tsuchiya, Atsuji Sekiguchi, Tsuneo Katsuyama (Fujitsu Laboratories, Japan)

2-3 A Novel Fault Diagnosis Approach to Path-Protected WDM Mesh Networks

Chi-Shih Chao (Feng Chia University, Chinese Taipei)

2-4 Active Diagnosis of High-level Faults in Distributed Internet Services

Huihu Long, Lu Cheng, Yongguo Zeng, Li Wu (Beijing University of Posts and Telecommunications, China)

2-5 Fault Localization for Heterogeneous Networks using Alarm Correlation on Consolidated Inventory Database

Jinsik Kim, Youngmoon Yang, Sukji Park, Sungwoo Lee, Byungdeok Chung (KT, Korea)

3 Wed, Oct. 22, 2008, 16:45~18:25 (TGB 2) **Community and Virtual Group Management** Chair: Toshio Tonouchi (NEC, Japan)

3-1 Probing Based Topology Inference for Large Scale Community Networks

Marat Zhanikeev, Yoshiaki Tanaka (Waseda University, Japan), Tomohiko Ogishi (KDDI R&D Laboratories, Japan)

3-2 Indexing Through Querying in Unstructured Peer-to-Peer Overlay Networks

K Haribabu, Chittaranjan Hota (Birla Institute of

Technology and Science Pilani, India), Antti Ylä-Jääski (Helsinki University of Technology, Finland)

3-3 TrustRRep: An Improved Reputation Management Scheme for Reliable Resource Sharing in Peer-to-Peer Networks

Junghwa Shin, Taehoon Kim, Sungwoo Tak (Pusan National University, Korea)

3-4 Group Key Locking Scheme in Mobile Multicast Environments with Modified MLDs

Byung-Jin Han, Jong-Hyouk Lee, Tai-Myoung Chung (Sungkyunkwan University, Korea)

4 Wed, Oct. 22, 2008, 16:45~18:25 (TGB 3) **Autonomous and Distrubted Control** Chair: Yoonhee Kim (Sookmyung Women's Univ., Korea)

4-1 The Best Practice and Evaluation of Processes to Develop OSSs using XML-based Interfaces

Yuki Kishikawa, Daisuke Fujishima, Hironao Tamura, Kazuhide Takahashi, Shoichi Hirata (NTT DoCoMo, Japan)

4-2 Review of Knowledge Engineering Requirements for Semantic Reasoning in Autonomic Networks

John Strassner (Motorola Labs, USA), Mícheál Ó Foghlú, Willie Donnelly (Waterford Institute of Technology, Ireland), Joan Serrat (Universitat Politècnica de Catalunya, Spain), Nazim Agoulmine (University of Evry, France)

4-3 Towards Management Requirements of Future Internet

Sungsu Kim (POSTECH, Korea), Mi-Jung Choi (KNU, Korea), Hong-Taek Ju (Keimyung University, Korea), Masayoshi Ejiri, James Hong (POSTECH, Korea)

4-4 Considerations on NETCONF-Based Data Modeling

Hui Xu, Debao Xiao (Huazhong Normal University, China)

5 Thu, Oct. 23, 2008, 10:30~12:35 (TGB 2) **Sensor Network Management** Chair: Kiyohito Yoshihara (KDDI R&D Labs., Japan)

5-1 A Hop by Hop Rate Control Based QoS Management for Real Time Traffic in Wireless Sensor Networks

Muhammad Monowar, Md. Obaidur Rahman, Byung Goo Choi, Choong Seon Hong (Kyung Hee University, Korea)

5-2 Extended Concentric-Clustering Routing Scheme Adapted to Various Environments of Sensor Networks

Jin-Young Choi, Sung-Min Jung, Young Ju Han, Tai-Myoung Chung (Sungkyunkwan University, Korea)

5-3 Towards Cluster Based Wireless Sensor Network Deployment Management and Network Coverage Verification

Zhanyang Zhang (City University of New York, USA)

5-4 A Logical Group Formation and Management Mechanism using RSSI for Wireless Sensor Networks

Jihyuk Heo, Jin Ho Kim, Choong Seon Hong (Kyung Hee University, Korea)

6 Thu, Oct. 23, 2008, 10:30~12:35 (TGB 3)
Traffic Identification
Chair: Seung-Joon Seok (Kyungnam Univ., Korea)

6-1 **OD Count Estimation Based on Link Count Data**
Yi Jin, Dongchen Jiang, Shuai Yuan, Jianting Cao, Lili Wang, Gang Zhou (Beihang University, China)

6-3 **An Efficient Approach for Analyzing Multidimensional Network Traffic**
Jia Yang, Hao Ma, Bei Zhang, Ping Chen (Peking University, China)

6-3 **The Measurement of User's Subjective Assessment on Throughput Degradation in Bulk Data Transmission**
Yasuhiro Sato, Shingo Ata, Ikuo Oka (Osaka City University, Japan)

6-4 **A Space-Efficient Fair Packet Sampling Algorithm**
Jin Zhang, Xiaona Niu, Jiangxing Wu (National Digital Switching System Engineering and Technology Research Center, China)

6-5 **Understanding IPv6 Usage: Communities and Behaviors**
Shaojun Huang, Changqing An, Hui Wang, Jiahai Yang (Tsinghua University, China)

7 Thu, Oct. 23, 2008, 13:35~15:40 (TGB 2)
QoS Management
Chair: Myung-Sup Kim (Korea University, Korea)

7-1 **DTPD: Data Transfer Tool Performance Diagnosis System in High Speed Networks**
Jong-Myoung Kim, Young Ju Han (Sungkyunkwan University, Korea), Giljae Lee, Woojin Seok (Korea Institute of Science and Technology Information, Korea), Tai-Myoung Chung (Sungkyunkwan University, Korea)

7-2 **QoS-aware Customer Network Management (Q-CNM) System for Efficient Handovers with PMIPv6 and MIH**
Young-Chul Jung, Young-Tak Kim (Yeungnam University, Korea)

7-3 **Dynamic Multi-Stream Transport Protocol**
Seung-Joon Seok (Kyungnam University, Korea), Hyeong-Jun Kim (LG Electronics, Korea), Kwang-Min Jung (Samsung Electronics, Korea), Kyung-Hoe Kim, Chul-Hee Kang (Korea University, Korea)

7-4 **A Study on the Service Quality Management Process and its Realization Strategy for Capturing Customer Value**
Eunjo Kwak, Byeong-Yun Chang, Daniel W. Hong, Byungdeok Chung (KT, Korea)

7-5 **A Novel Integrated Supporting System for Mesh-Pull Based P2P IPTV**
Bo Wen, Feng Liu, Luoming Meng (Beijing Jiaotong University, China)

8 Thu, Oct. 23, 2008, 16:10~18:15 (TGB 2)
Policy and Service Management
Chair: Mi-Jung Choi (KNU, Korea)

8-1 **BPEL Driven Policy Management of Virtualized Network Resources for IMS Environments**
Nobutaka Matsumoto, Takahiro Miyamoto, Michiaki Hayashi, Hideaki Tanaka (KDDI R&D Laboratories, Japan)

8-2 **Research on the Associated Pricing Policy in**

Telecom Industry
Xin Yue (Beijing University of Posts and Telecommunications, China), Junjie Xu (Anqing Teachers College, China), Zhanhong Xin (Beijing University of Posts and Telecommunications, China)

8-3 **A Semantic Description Approach for Telecommunications Network Capability Services**
Xiuquan Qiao, Xiaofeng Li, Tian You (Beijing University of Posts and Telecommunications, China)

9 Fri, Oct. 24, 2008, 10:00~12:05 (TGB 2)
Wireless and Mobile Network Management
Chair: Chi-Shih Chao (Feng Chia Univ., Chinese Taipei)

9-1 **Low Latency Proactive Handover Scheme for Proxy MIPv6 with MIH**
Igor Kim, Young-Chul Jung, Young-Tak Kim (Yeungnam University, Korea)

9-2 **A Simple Modeling for QoS Management of 802.11 DCF**
Takashi Satake (NTT, Japan)

9-3 **Take the Challenge of IP evolution and OAM solution**
Lihong Wei, Lingshan Kong (China Mobile Company, China)

9-4 **Performance Evaluation of Heartbeat-style Failure Detector over Proactive and Reactive Routing Protocols for Mobile Ad Hoc Network**
Haijun Zhao, Yan Ma, Xiaohong Huang, Fang Zhao (Beijing University of Posts and Telecommunications, China)

10 Fri, Oct. 24, 2008, 13:05~15:10 (TGB 2)
Security Management
Chair: Marat Zhanikeev (Waseda Univ., Japan)

10-1 **Design and Implementation of an SNMP-based Traffic Flooding Attack Detection System**
Jun-Sang Park, Myung-Sup Kim (Korea University, Korea)

10-2 **A Method to Detect Prefix Hijacking by Using Ping Tests**
Mitsuho Tahara, Naoki Tateishi, Toshio Oimatsu, Souhei Majima (NTT, Japan)

10-3 **Application of Data Mining to Network Intrusion Detection: Classifier Selection Model**
Huy Nguyen, Deok-Jae Choi (Chonnam University, Korea)

10-4 **Detection of Leaps/sLumps in Traffic Volume of Internet Backbone**
Yutaka Hirokawa, Kimihiro Yamamoto, Shigeaki Harada, Ryoichi Kawahara (NTT, Japan)

10-5 **A Sampling Method for Intrusion Detection System**
Ning Zhuo, Jian Gong (Southeast University, China)

Short Paper Sessions

S1 Thu, Oct. 23, 2008, 15:40~18:15 Poster Presentation (TGB 1) Chair: Yongqi He (PKU, China)

S1-1 Fast Traffic Classification in High Speed Network
Rentao Gu, MinHuo Hong, Hongxiang Wang, Yuefeng Ji (Beijing University of Posts and Telecommunications, China)

S1-2 Service Impact Analysis Framework using Service Model for Integrated Service Resource Management of NGN Services
Seung-Hee Han, Bom-Soo Kim, Chan-Kyou Hwang, Jae-Jin Lee (KT, Korea)

S1-3 A Trusted Quality of Web Services Management Model Based on Six Dimensional QoWS Model and End-to-End Monitoring
Nan Guo, Tianhan Gao, Bin Zhang (Northeastern University, China)

S1-4 Least Interference Optimization Based Dynamic Multi-path Routing Algorithm in ASON
Tong Zhao, Yueming Lu, Yuefeng Ji (Beijing University of Posts and Telecommunications, China)

S1-5 QoS-Aware Scheduling in Emerging Novel Optical Wireless Integrated Networks
Min Luo, Hui Li, Yueming Lu, Yuefeng Ji (Beijing University of Posts and Telecommunications, China)

S1-6 An Energy-efficiency Route Protocol for MIMO-based Wireless Sensor Networks
QingHua Wang (University of Science and Technology of China, China)

S1-7 Service Oriented T-MPLS Resilience Algorithm with Multi-QoS Constrained
Hua Qu, Jihong Zhao, Hong-bao Mao (Xi'an Institute of Post and Telecommunications, China)

S1-8 Network Stability Analysis Techniques Using the Virtual Articulation Node
Yonghyoun Kim, Kisu Kim, SungJin Ahn, JinWook Chung (Sungkyunkwan University, Korea)

S1-9 A Channel Management Framework to Construct User Preferred Fast Channel Change Stream in IPTV
Md Mamun Rashid, Dae Sun Kim, Choong Seon Hong (Kyung Hee University, Korea)

S1-10 A Fair Mobile Payment Protocol
Wei Fan, Huaying Shu, Qiang Yan, Fang Wang (Beijing University of Posts and Telecommunications, China)

S1-11 Statistical Analysis of Slow Portsweep
Noriaki Yoshiura (Saitama University, Japan)

S1-12 Empirical Analysis of Application-level Traffic Classification using Supervised Machine Learning
Byung-Chul Park, Young Won (POSTECH, Korea), Mi-Jung Choi (KNU, Korea), Myung-Sup Kim (Korea University, Korea), James Hong (POSTECH, Korea)

S1-13 Virtualization-based Operation Support Systems: Performance Evaluation and Systems Design
Yujiro Mochizuki, Kazuhiko Higashi, Kumiko Goto, Minoru Kato (NTT Comware, Japan)

S1-14 A Management Framework for IMS using

Service Managed Objects

Muhammad Shoaib Siddiqui, Obaid Amin Syed, Choong Seon Hong (Kyung Hee University)

S1-15 Evaluating Open Service Access with an Abstract Model of NGN Functions
Samson Lee, John Leaney, Tim O'Neill (University of Technology, Sydney, Australia), Mark Hunter (Alcatel-Lucent, Australia)

S1-16 Methods for Rapidly Testing Node Reachability with Congestion Control and Evaluation
Naoki Tateishi, Mitsuho Tahara, Yu Miyoshi, Majima Souhei (NTT, Japan)

S1-17 The Design of an Open and Integrated Sensor Network Management Platform
Michalis Kalochristianakis, Vasileios Gkamas, Georgios Mylonas, Sotiris Nikolettseas (Patras University, Greece), Jose Rolim (University of Geneva, Switzerland), Emmanouel Varvarigos (University of Patras, Greece)

S2 Fri, Oct. 24, 2008, 13:05~15:40 Poster Presentation (TGB 1) Chair: Naoto Miyauchi (Mitsubishi El., Japan)

S2-1 Self-Organized Cluster Based Multi-Hop Routing for Wireless Sensor Networks
Hongjoong Sin, Sungju Lee, Jangsu Lee, Seunghwan Yoo, Sanghyuc Lee, Jaesik Lee, Sungchun Kim (Sogang University, Korea)

S2-2 An Adaptable Method of E-Workflow Composition Based on Distributed Awareness
Hongbin Sun, Yongsheng Ding (Donghua University, China)

S2-3 An Adaptive Control Scheme of Reserved Bandwidth for RPR in Steering Mode
Wenfong Wang, Yishian Chen, Lihchuyau Wu (National Yunlin University of Science and Technology, China)

S2-4 Estimating Half-Path RTT in Backbone Network
Lisheng Huang, Wenyong Wang, Mingtian Zhou (University of Electronic Science and Technology of China, China)

S2-5 A Radio Network Co-design System for Planning, Operation, and Customer Relations Divisions
Kosei Kobayashi, Yasuhiko Matsunaga, Takayuki Nyu, Hiroto Sugahara (NEC, Japan)

S2-6 Traffic Matrix Estimation Using Square Root Filtering/Smoothing Algorithm
JingJing Zou (University of Science and Technology Beijing, China), Jiahai Yang (Tsinghua University, China), Guanqun Zhang (Tsinghua University, China)

S2-7 A Knowledge-Based Tool to Support Clear Relationship between Threats and Countermeasures based on International Standards
Guillermo Ramirez Caceres, Yoshimi Teshigawara (Soka University, Japan)

S2-8 Incentives for Cooperative Relay in Heterogeneous Networks: A Dynamic Reputation-Based Approach
Jun Hwang, Andrei Shin, HyenYoung Yoon (Seoul National University, Korea)

S2-9 User-Centric Prediction for Battery Lifetime of Mobile Devices

Joon-Myung Kang, Chang-Keun Park, Sin-Seok Seo, James Won-Ki Hong (POSTECH, Korea), Mi-Jung Choi (KNU, Korea)

S2-10 A Study on the Reliable and Flexible Implementation of Workforce Management using Business Process Management

Kyu-Hwal Kim, Byeong-Yun Jang, Min-Kyu Kwon, Seung-Hak Seok (KT, Korea)

S2-11 Enterprise Management System with Web-Crawler

MyungSil Choi, YongSoo Park, KwangSeon Ahn (Kyungpook National University)

S2-12 A Construction Process for Small-Scale Network Systems

Yuka Kato (Advanced Institute of Industrial Technology, Japan)

S2-13 Design, Implementation and Evaluation of a Network Management System for a High Quality IP-based Video Transmission Service

Shuntaro Kashihara, Kenichi Ogaki, Tomohiro Otani (KDDI

R&D Laboratories, Japan)

S2-14 Availability in Peer to Peer Management Networks

Ouldooz Baghbakarimi (Iran University of Science and Technology, Iran), Saleh Yousefi (Urmia University, Iran), Mahmood Fathy (Iran University of Science and Technology, Iran), Mojtaba Mazoochi (Iran Telecommunication Research Center, Iran)

S2-15 Field operations management and unmanned operations management toward NOM 2.0

Byeong-Yun Chang, Daniel W. Hong, Kyu-Hwal Kim, Byung-Deok Chung (KT, Korea)

S2-16 The IMS/SDP Structures and Implementation of Presence Service

Jae-Hyoung Cho, Jae-Oh Lee (Korea University of Technology and Education, Korea)

S2-17 Detection and Handling of Trunk Congestion in the ATM Network

Charlie Yang, Chuan-Chuen Chang, Chi-Ming Chen, David Lu, Monowar Hossain (AT&T, USA)

Innovation Sessions

11 Thu, Oct. 23, 2008, 16:10~18:15 (TGB 3)

Innovation Session 1

Chair: Kwang-Hui Lee (Changwon Nat. Univ., Korea)

I1-1 Management of Custom AS in an NMS

Choonho Son, Kieung Kim, Jae-Jin Lee (KT, Korea)

I1-2 Two Network Formation Games for ISP Relationship

Jun Wang (Waseda University, Japan), Kyoko Yamori (Asahi University, Japan), Yoshiaki Tanaka (Waseda University, Japan)

I1-3 Uniform interfaces for the Host-based Security System: SysKeeper OS 3.0

Jinho Kim, Young Han Lee, Choi Jong Hwa, Hyung Song, Hyun-Rae Cho (Tmaxsoft, Korea)

I1-4 A study on improvement of operation and maintenance for optical access network facilities.

Junichi Kawataka, Shigenori Uruno, Takeshi Masuda, Masato Eguchi, Hiroshi Ishii (NTT, Japan)

I1-5 Service Oriented Network Management System using Enterprise Service Bus: a case study at KT

Dong Cheul Lee (KT, Korea)

12 Fri, Oct. 24, 2008, 13:05~15:10 (TGB 3)

Innovation Session 2

Chair: Qiliang Zhu (BUPT, China)

I2-1 Real-time 3G access network analysis using remote DM

Ilyong Kim, Kyung Hwa Ok (KTF, Korea)

I2-2 Experience of implementing NETCONF protocol

Chen Limiao (Huazhong Normal University, China)

I2-3 Gradual Optimization of Failover DHCP Servers' Pool Sizes Reduces Address Assignment Failures in VLANs

Kenji Hori, Kiyohito Yoshihara, Akira Idoue (KDDI R&D Laboratories, Japan)

I2-4 Using Markov Process to Model Wireless Sensor Network Life Expectancy

Zhanyang Zhang, Miriam Tausner (City University of New York, USA)

Exhibitions

KT: GOSS (Global OSS) Solution



GOSS is a *live* demo system running actual solutions.

The GOSS offers some OSS solutions that support NGOSS-based service management and high-level network management. More details of each system are as follows;

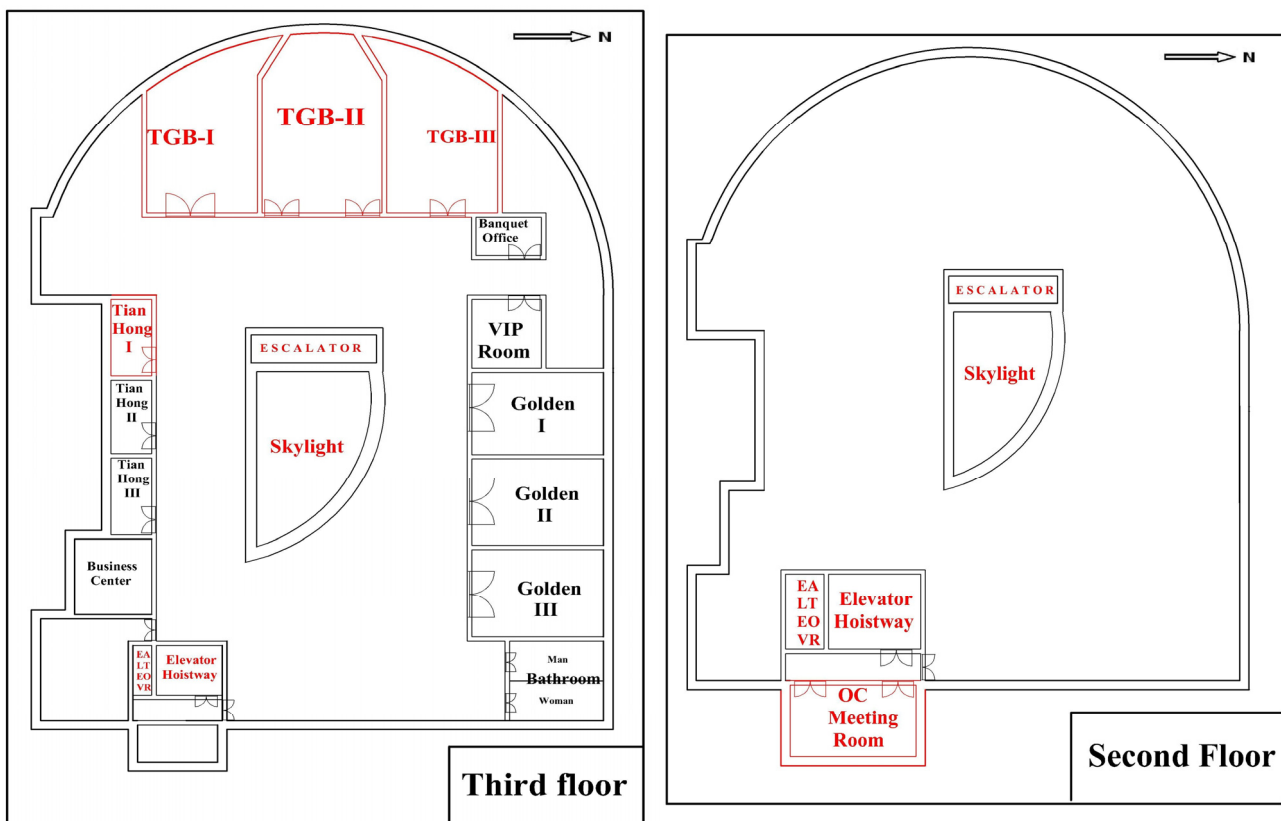
- **Service Management System:** E2E service fulfillment and assurance process management system covering whole telecom services.
- **IRIMS:** Integrated Routing Information Management System.
- **TFMS:** Total Fault Management System monitoring and handling all kinds of network fault events with a one-stop view.
- **MPLS-VPN NMS:** High-level network management system managing MPLS specific information on MPLS-VPN network

NTT Comware: MPLS Network Health Check Management System



NTT COMWARE exhibits MPLS Network Health Check Management System for network provisioning. This system is a simulator for MPLS network designing and traffic engineering, and it allows network administrator to visualize both MPLS paths and end-to-end IP flow in network topology. By using this system to simulate failures in MPLS network, it is easy to compute available bandwidth of the physical link and to find where bottlenecks in the network are.

PARK PLAZA BEIJING SCIENCE PARK FLOOR PLAN



- All presentations will be held in Tianhong Grand Ballroom (TGB) 2 & 3
- Exhibitions, Posters and Coffee/Tea Breaks will be held in TGB 1
- OC meeting room is the Function Room on the second floor