The 30th International Conference on Information Networking  ICOIN 2016

Kota Kinabalu, Malaysia

Sponsored by KIISE Information Networking Society
Technically Co-sponsored by IEEE Computer Society
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Sanghun Ahn, University of Seoul
SangKeun Lee, Korea University
Sang-Kook Han, Yonsei University
Sejun Song, University of Missouri - Kansas City
Seong-Ho Jeong, Hankuk University of Foreign Studies
Seung Yeob Nam, Yeungnam University
Seungsheon Kim, Hanyang University
Shigeki Shiozawa, Kanagawa Institute of Technology
Shih-Cheng Horng, Chaoyang University of Technology
Shingak Kang, Electronics and Telecommunications Research Institute
Shingo Ichii, University of Tokyo
Sinji Kamolphiwong, Prince of Songkla University
Su-il Choi, Chonnam National University
SukYoung Lee, Yonsei University
Sungwook Tak, Pusan University
Surasak Sanguanpong, Kasetsart University
Taekyoung Kwon, Seoul National University
Takeo Fujii, The University of Electro-Communications
Takeshi Ikenaga, Kyushu Institute of Technology
Tapio Frantti, Finnish Research and Engineering
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Teruaki Kitasaka, Kumamoto University
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Yujin Lim, University of Suwon
Yung Yi, KAIST
Yuichi Teranishi, NICT
Zhefu Shi, University of Missouri - Kansas City
Greetings

Message from the ICOIN 2016 General Co-chairs

On behalf of the whole organizing committee, we welcome you to Kota Kinabalu, Malaysia for the 30th International Conference on Information Networking (ICOIN 2016). We are very grateful to have many talented and very well responsible people involved in the process of submitting papers, chairing sessions, reviewing papers, and organizing the conference.

This event is a product of the hardship of many committee members who have worked beyond deadlines for the perfect conference and performed the tedious task of advertisement in the best of manner. The conference is an amalgam of high-quality submissions brought forward by thorough research to meet the high standard required, as of in today’s world.

We are also pleased to let you know that, this year, ICOIN has reached its 30th event. It is a remarkable achievement by all the people who have sacrificed their valuable time and effort for the 30 memorable years. ICOIN 2016 is ready to serve you with ever heightened quality of technical and social programs. You will find the technical sessions organized in 3 days interesting, informative and inspiring.

Of course, Kota Kinabalu can also be a great source of recreation which is a paradise island of one of the world famous travel destinations with her sandy beaches providing a picturesque backdrop to her colorful, deeply spiritual and unique culture. Please, enjoy your stay by combining your conference activities with cultural, historical and archaeological attractions, visiting shopping centers, spas, cafés, parks, and many more. We believe you will make unforgettable memories here.

Again, we would like to express our sincere gratitude to the committee members and referees who made tremendous contributions to this event. Our special thanks are due to Profs. Hyungkeun Lee: the Program Committee Chair, Prof Sanghwan Lee: the finance chair, Profs. Jungryun Lee, Mohd Nazri Ismail, Ho Chin Kuan, Yasuo Okabe: Publicity Co-chairs, Prof. HyungJune Lee: Registration chair, Prof. Myungsik Yoo: Publication chair, and all other chairs.

We wish your participation in ICOIN 2016 being a memorable one with both valuable technical exchanges and wonderful cultural and outdoor experiences.

Ki-Joon Chae, Keecheon Kim and Katsuyuki Yamazaki

General Co-chairs, ICOIN 2016

Ki-Joon Chae
Ewha Womans University, Korea

Keecheon Kim
Konkuk University, Korea

Katsuyuki Yamazaki
Nagaoka University of Technology, Japan
Message from the Technical Program Committee Chair

It is our great pleasure to welcome all of you to Kota Kinabalu from January 13 through 15, 2016 for the 30th International Conference on Information Networking (ICOIN). Thanks to its 30 years' tradition, ICOIN 2016 will be an exciting conference covering broad topics on computer communications and network technologies in the theoretical and practical aspects.

This year we have received 237 paper submissions electronically from 22 countries. A rigorous review process has followed, in which all papers have been reviewed by at least three independent reviewers. After the reviews and discussions, 57 papers have been accepted for oral presentations and 44 papers for poster ones, which results in 43% acceptance rate, and outstanding papers have been selected for the Best Paper Award. The 58 oral papers are organized into 12 technical sessions, which will be held in 2 parallel tracks. The program covers a variety of topics on both of wireless and wired communication networking technologies. It reflects the growing need to develop cross-layer or converging approaches to address the future challenges in this area. In addition to the contribution of prominent authors from all over the world, we believe this year's precious and interesting program is possible only by the commitment of technical program committee members.

We are indebted to all of the 133 TPC members from 21 countries for their active participation and volunteering their precious time. Also we would like to thank our sponsors, KIISE and IEEE Computer Society, for their support of this successful event. We extend our sincere thanks to the general co-chairs, Prof. Ki-Joon Chae, Prof. Keecheon Kim and Prof. Katsuyuki Yamazaki, for their support and guidance. We hope all of you enjoy the interesting program of ICOIN 2016 as well as the beautiful scenery and attractions of Kota Kinabalu.

Hyungkeun Lee  
Technical Program Committee Chair, ICOIN 2016
## ICOIN 2016 Program at a Glance

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<th>Track 2</th>
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<td><strong>Jan. 12, 2016 (Tuesday)</strong></td>
<td>Organizing Committee meeting / Technical Program Committee meeting</td>
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<td><strong>Jan. 13, 2016 (Wednesday)</strong></td>
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<tr>
<td>08:30-09:00</td>
<td>Registration Open</td>
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<td>09:00-10:00</td>
<td>Tutorial 1 (Buntunggan)</td>
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<td>Coffee Break</td>
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<td>10:15-11:15</td>
<td>Tutorial 2 (Buntunggan)</td>
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<td>Coffee Break</td>
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<tr>
<td>11:30-12:30</td>
<td>Opening Ceremony/Keynote Speech (Buntunggan)</td>
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<tr>
<td>12:30-13:30</td>
<td>Lunch Break (Buntunggan)</td>
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<tr>
<td>15:30-16:00</td>
<td>Coffee Break</td>
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<td>16:00-18:00</td>
<td>Oral 3 : Security and Privacy II (Masokoh) Chair: Kenichi Yoshida (Univ. of Tsukuba)</td>
<td>Oral 4 : Ad hoc and Sensor networks II (Magibah) Chair: Hyunsaeung Choo (Sungkyunkwan Univ.)</td>
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<td><strong>Jan. 14, 2016 (Thursday)</strong></td>
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<td>08:30-09:00</td>
<td>Registration Open</td>
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<tr>
<td>09:00-10:00</td>
<td>Poster 1 : Cloud and Mobile communication Chair: Young-June Choi (Ajou Univ.)</td>
<td>Poster 2 : IoT and Middleware Chair: TBA</td>
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<tr>
<td>10:00-12:00</td>
<td>Oral 5 : Routing techniques (Masokoh) Chair: Jani Väre (Teleste)</td>
<td>Oral 6 : CCN and PHY (Magibah) Chair: Tae-Kon Kim (Korea Univ.)</td>
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<tr>
<td>12:00-13:00</td>
<td>Lunch Break (Buntunggan)</td>
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<tr>
<td>13:00-15:00</td>
<td>Oral 7 : Network design and implementations (Masokoh) Chair: Jessie Hui Wang (Tsinghua Univ.)</td>
<td>Oral 8 : Streaming service and traffic (Magibah) Chair: Charles H.-P. Wen (N. Chiao Tung Univ.)</td>
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<tr>
<td>15:00-16:00</td>
<td>Poster 3 : Wireless networks Chair: TBA</td>
<td>Poster 4 : SDN and PHY Chair: TBA</td>
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<tr>
<td>16:00-18:00</td>
<td>Oral 9 : SDN and Network architecture (Masokoh) Chair: Kazuki Oya (Univ. of Electro-Comm.)</td>
<td>Oral 10 : Cloud and Mobile communication (Magibah) Chair: JongWon Kim (GIST)</td>
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<tr>
<td>18:30-21:30</td>
<td>Banquet (Buntunggan)</td>
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<td><strong>Jan. 15, 2016 (Friday)</strong></td>
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<td>08:30-09:00</td>
<td>Registration Open</td>
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<tr>
<td>09:00-10:00</td>
<td>Poster 5 : Security, Service and Streaming Chair: TBA</td>
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<td>10:00-12:00</td>
<td>Oral 11 : Load balancing and Offloading (Masokoh) Chair: Gaik-Yee Chan (Multimedia Univ.)</td>
<td>Oral 12 : Location-based services (Magibah) Chair: HyungJune Lee (Ewha Womans Univ.)</td>
</tr>
</tbody>
</table>
Wed. January 13. 2016 (Buntunggan)

09:00 - 10:00

Tutorial 1
Distributed Algorithms for Communication Networks
Presenter: Prof. Song Chong (KAIST, Korea)

Abstract:
In this tutorial talk, we will review mathematical foundations of distributed algorithms for a broad class of network protocols such as power control, flow/congestion control, routing, medium access control etc. In particular, we view network protocols in action as a distributed optimization process where geographically distributed participants (end hosts, routers, and links) either optimize a common objective (resource efficiency, fairness, QoE etc.) in a cooperative manner or maximize individually their own payoffs while competing for resources in a non-cooperative manner. Distributed network algorithms are iterative and message-passing algorithms so that the convergence of the algorithms in a distributed and asynchronous environment is an essential property to be verified. By invoking variational inequality problems and fixed point theory, we provide a unified mathematical view on these issues.

Short Biography
Dr. Song Chong is a Professor in the School of Electrical Engineering at Korea Advanced Institute of Science and Technology (KAIST) and is the Head of Computing, Networking and Security Group of the school. He is the Founding Director of KAIST LGE 5G Mobile Communications & Networking Research Center funded by LG Electronics. Prior to joining KAIST, he was with the Performance Analysis Department, AT&T Bell Laboratories, Holmdel, New Jersey, as a Member of Technical Staff. His current research interests include wireless networks, mobile systems, network data analytics and distributed algorithms. He is an Editor of IEEE/ACM Transactions on Networking, IEEE Transactions on Mobile Computing and IEEE Transactions on Wireless Communications. He was the Program Committee Co-Chair of IEEE SECON 2015 and has served on the Program Committee of a number of leading international conferences including IEEE INFOCOM, ACM MobiCom, ACM CoNEXT, ACM MobiHoc and IEEE ICNP. He serves on the Steering Committee of IEEE WiOpt and was the General Chair of IEEE WiOpt 2009. He received the IEEE William R. Bennett Prize in 2013, given to the best original paper published in IEEE/ACM Transactions on Networking during the period of 2011-2013, and the IEEE SECON Best Paper Award in 2013. He received the B.S. and M.S. degrees from Seoul National University and the Ph.D. degree from the University of Texas at Austin, all in electrical engineering.

Wed. January 13. 2016 (Buntunggan)

10:15 - 11:15

Tutorial 2
On Performance of Green Wireless Communications: an Application in 5G Networks
Presenter: Prof. Dinh-Thuan Do (Eastern International University, Vietnam)

Abstract:
Radio frequency (RF) energy transfer and harvesting techniques have recently become effective methods to power the 5G next generation wireless networks. As this emerging technology enables energy replenishment of wireless devices in cellular networks, it is advantageous in supporting applications with longer operation requirements. In this tutorial, we present a comprehensive literature review on the research progresses and develop new system model in wireless networks with RF energy harvesting (EH) capability, referred to as RF energy harvesting networks.
Keynote Speech

Short Biography
Dr. Dinh-Thuan Do was born in Tuy Hoa City, Vietnam, on July 5th, 1980. He received B.Sc. degree in Electronics and Communications Engineering, M.Sc. and Ph.D. degrees in Electrical Engineering from the Vietnam National University (HCMC.VNU) in 2003, 2007, and 2012 respectively. From September 2009 to September 2010, he was a visiting Ph.D. student at the Wireless Communications Lab (National Tsing Hua University, NTHU), Hsinchu City, Taiwan. Prior to joining academia, he worked as senior engineer at VinaPhone Mobile Network Company (VNPT Group) since 2003 until 2009. He was a vice chair of Communications Engineering Department, Ho Chi Minh City University of Technology and Education since 2011. He has been awarded as excellent young researcher with Golden Global Prize 2015 by Ministry of Science and Technology in Vietnam. He is currently Assistant Professor and Head of Wireless Communications Lab (WICOM LAB), Eastern International University, Vietnam. Dr. Thuan is a member of The Institute of Electronics, Information and Communication Engineers (IEICE). He also serves as Guest Editor, TPC Member and Active Reviewer for several journals/international conferences.

Wed. January 13. 2016 (Buntunggan)
11:30 - 12:30

Keynote Speech
The ICT Paradigm Shift along with the Rise & Fall of Global ICT Companies
Presenter: President. SangHong Lee (Institute for Information & communications Technology Promotion, Korea)

Abstract:
The global ICT industry has been and continues to keep the world economy moving and alive. As we look back at its history and progress, I would like to speak of the type of companies that will rise and survive. During the last 35 years, do you know how many companies have fallen and how many survived through the ICT paradigm shift? What do those companies have in common? In an age of super-connected society, ICBM, and sharing economy, let us look at what small and medium sized companies need to do in order to lead the competition paradigm by 2020.

Short Biography
President SangHong Lee began as a researcher in Korea’s Electronics and Telecommunications Research Institute (ETRI) with a doctorate in Information Engineering at Sungkyunkwan University. From there, he moved up to becoming KT Research Development Institute’s Director of Research Planning and Management Department, Chief of KT Central Research Institute, Vice President of KT Advanced Institute of Technology, and President of KT Powertel. He is a deeply experienced specialist in the field of research planning, management, and development. On June 2014, Dr. Lee took office as the first president of the Institute for Information & Communications Technology Promotion, a public organization mainly responsible for the ICT R&D of the Republic of Korea. As the president of IITP, he plans the ICT related policies, projects & progress management, and technology commercialization of ICT R&D. As the leader of such important role in the ICT R&D, he puts all his efforts into developing the technical commercialization and competency of human resources. Dr. Lee is also a prolific essayist of “The Scent of a Flower, the Scent of Communication,” which is about his managerial experience in KT expressed in the form of a flower and “The Lives of the People in Umyeon.dong.” The latter is a story told through a collection of letters that he and his employees sent back and forth. Along with important agency announcements, Dr. Lee still continues to communicate with his employees through words of encouragement and compliments with moving stories.
Technical Sessions

January 13, 2016 (Wednesday)
13:30-15:30

ORAL SESSION 1
Security and Privacy 1
Chair: Sungrae Cho (Chung-Ang Univ.)

[O1-1] Papering Over the Cracks: An Investigation Into the Effects of Introducing Best Practices on the Web Security Ecosystem
Emil Larsson (Schibsted Media Group, Sweden); Johan Sigholm (Swedish Defence University, Sweden)

Roan Simões da Silva and Sergio Donizetti Zorza (Federal University of Sao Carlos, Brazil)

[O1-3] Signing Key Leak Detection in Google Play Store
Long Nguyen-Vu, Jungsoo Park, Ngoc-Tu Chau and Souhwan Jung (Soongsil University, Korea)

Bharat Buddhdev, Parvez Faruki, Manoj Gaur, Vijay Laxmi (Malaviya National Institute of Technology, India)

[O1-5] Enhancing Performance of Cardinality Analysis by Packet Filtering
Shinichi MORI, Akira SATO and Kenichi YOSHIDA (University of Tsukuba, Japan)

ORAL SESSION 2
Ad hoc and Sensor networks 1
Chair: Sanghwan Lee (Kookmin Univ.)

[O2-1] Spatially Dependent Loss Tomography for Multi-hop Wireless Networks
Tatsuya Morita, Takahiro Matsuda and Tetsuya Takine (Osaka University, Japan)

[O2-2] A Study on Penetration Strategy of On-board Unit Taking Account of the Type of Vehicles in V2V Communications
Hiroaki Minami, Yumi Takaki, Chikara Ohta and Hisashi Tamaki (Kobe University, Japan)

[O2-3] Selection of Relay UE with Energy Harvesting Capabilities in Public Safety Environment
Daniyal Munir, Syed Tariq Shah and Won Jin Lee (Sungkyunkwan University, Korea); Syed Faraz Hasan (Massey University, New Zealand); Min Young Chung (Sungkyunkwan University, Korea)

[O2-4] Collision Avoidance Scheme for Micro UAVs Delivering Information
Hyo Hyun Choo (Inha Technical College, Korea); Areeya Rubenecia, Paul Vincent Contreras and Myungwhan Choi (Sogang University, Korea)

[O2-5] Control of Transmission Power and Carrier Sense Threshold to Enhance Throughput and Fairness for Dense WLANs
Irda Roslan (Universiti Teknikal Malaysia Melaka, Malaysia); Takahiro Kawasaki, Toshiki Nishiiue and Yumi Takaki, Chikara Ohta and Hisashi Tamaki (Kobe University, Japan)

16:00-18:00

ORAL SESSION 3
Security and Privacy 2
Chair: Kenichi Yoshida (Univ. of Tsukuba)

[O3-1] An Implementation of Privacy Preserving Stream Integration System
Junpei Kawamoto (Kyushu University, Japan)

[O3-2] Intrusion Detection System Based on the Analysis of Time Intervals of CAN Messages for In-Vehicle Network
Hyun Min Song, Ha Rang Kim and Huy Kang Kim (Korea University, Korea)

[O3-3] An Incident Response Support System Based on Seriousness of Infection
Hiroyasu Hasegawa, Yukiko Yamaguchi and Hajime Shimada (Nagoya University, Japan); Hiroki Takakura (National Institute of Informatics, Japan)

Shi Li, Inshil Doh and Kijoon Chae (Ewha Womans University, Korea)

ORAL SESSION 4
Ad hoc and Sensor networks 2
Chair: Hyunseung Choo (Sungkyunkwan Univ.)

[O4-1] Reliable and Efficient Multi-rate Aware Reactive (REMAR) Routing for IEEE 802.11 Based MANET
Ahmed Khalid, Hyeongtae Ahn and Chee-Ha Kim (Pohang University of Science and Technology, Korea)

Min Wei and Shuaidong Zhang (Chongqing University of Posts and Telecommunications, P.R. China); Keecheon Kim (Konkuk University)

Song Yang, Dong Dengq, Liu Wei and Peng Xue (Shandong University, P.R. China)

Duc Tai Le and Thang Le Duc (Sungkyunkwan University, Korea); Vyacheslav V. Zalyubovskiy (Sobolev Institute of Mathematics, SB RAS, Russia); Hyunseung Choo (Sungkyunkwan University, Korea)
January 14, 2016 (Thursday)

10:00 - 12:00

ORAL SESSION 5
Routing techniques
Chair: Jani Väre (Teleste)

[O5-1] A Routing Based on OLSR with Traffic Load Balancing and QoS for Wi Mesh Network
Kazuhiro Yamaguchi, Takaharu Nagahashi, Takuya Akiyama, Takahiro Yamaguchi and Hideaki Matsue (Tokyo University of Science, Japan)

[O5-2] A Robust Node Localization Method to Address Flip Ambiguity in Wireless Networks
Wei Liu, Enqing Dong, Yang Song (Shandong University, P.R. China)

[O5-3] Performance Analysis of Routing Methods Based on OLSR and AODV with Traffic Load Balancing and QoS for Wi-Fi Mesh Network
Kazuhiro Yamaguchi, Kazunari Mukaiyama, Takuya Akiyama, Tomohiro Kobayashi and Hideaki Matsue (Tokyo University of Science, Japan)

[O5-4] Performance Analysis of Two High Rate Routing Protocols for Wireless Sensor Networks Based on the Linux Platform
Juan Xu, Enqing Dong, Dejing Zhang, Wei Liu and Weichong Zhong (Shandong University, P.R. China)

[O5-5] Congestion Prevention Mechanism Based on Q-learning for Efficient Routing in SDN
Seonhyeok Kim, Jaehyeok Son, Ashis Talukder and Choong Seon Hong (Kyung Hee University, Korea)

ORAL SESSION 6
Content-centric networks and Physical layer
Chair: Tae-Kon Kim (Korea Univ.)

[O6-1] A MultiCriteria Caching Decision for Information Centric Networks
Igor Carvalh, Airton Ishimori and Antonio Abelem (UFPA - Federal University of Pará, Brazil)

[O6-2] Content Allocation in Information-Centric Networks
Sang-Yeon Kim and Jung-Won Lee (Yonsei University, Korea)

[O6-3] On Adaptive Pre-fetching and Caching the Contents in Content Centric Networking
Kyi Thar, Saeed Ullah, Doo Ho Lee and Choong Seon Hong (Kyung Hee University, Korea)

[O6-4] Energy Savings in Processor Based on Prediction Technique
Dinh-Mao Bui, Thien Huynh-The, Sangyoung Lee (Kyung Hee University, Korea); YongIk Yoon (SookMyung Women’s University, Korea); SungIl Jun (Electronics and Telecommunications Research Institute Korea)

[O6-5] Optimization of Receiver FIFO for IEEE 802.3ba 40GBASE PCS Sub layer
Anuradha Nanayakkara and Subramaniam Thayaparan (University of Moratuwa, Sri Lanka)

13:00 - 15:00

ORAL SESSION 7
Network design and implementations
Chair: Jessie Hui Wang (Tsinghua Univ.)

[O7-1] Analyzing Intercontinental Circuitousness to Improve the Interconnection and Routing for ISPs
Pengcheng Du, Jessie Hui Wang, Jiahai Yang, J Wang and YJ Zhao (Tsinghua University, P.R. China)

[O7-2] Infrastructure-based Delay Tolerant Network Communication
Yasser Mawad and Stefan Fischer (University of Lübeck, Germany)

[O7-3] MLCS: A Multi-level Correlation Scheduling Algorithm for Multipath Transport
Bo Hu, Lin Xing, Zeng Wang and Na Liu (Beijing University of Posts and Telecommunications, P.R. China)

[O7-4] Deadline-Aware Packet Routing Based on Optimal Charging Schedule in Electric Vehicular Networks
Nusrat Sharmin and HyungJune Lee (Ewha Womans University, Korea)

Kazuaki Oya, Toshinori Watanabe and Hisashi Koga (University of Electro-Communications, Japan)

ORAL SESSION 8
Streaming service and traffic
Chair: Charles H.-P. Wen (National Chiao Tung Univ.)

[O8-1] Equalizing Latency Peaks Using a Redundant Multipath-TCP Scheme
A. Hunger and P. A. Klein (University of Duisburg-Essen, Germany)

[O8-2] Client-side Rate Adaptation Scheme for HTTP Adaptive Streaming Based on Playout Buffer Model
Jiwoo Park and Kwangsue Chung (Kwangwoon University, Korea)

[O8-3] Traffic Engineering for IoT
Masafumi Katoh, Izuru Sato and Naotoshi Watanabe (Fujitsu Laboratories Ltd., Japan)

[O8-4] Video Quality Adaptation Scheme for Improving QoE in HTTP Adaptive Streaming
Sangwook Kim, Dooyeol Yun and Kwangsue Chung (Kwangwoon University, Korea)

[O8-5] Dynamic Segment Duration Control for Live Streaming Over HTTP
Dooyeol Yun and Kwangsue Chung (Kwangwoon University, Korea)
ORAL SESSION 9
SDN and Network architecture
Chair: Kazuaki Oya (Univ. of Electro-Comm.)

[O9-1] A Research on Regional Routing Scheme Based Mobile Agent for SDN
MiYoung Jo and Keecheon Kim (Konkuk University, Korea)

Cheng Suo, I-Chen Tsai and Charles H.-P. Wen (National Chiao Tung University, Taiwan)

[O9-3] Forwarding Strategy on SDN-based Content Centric Network for Efficient Content Delivery
Jaeyeok Sun, DoHyeon Kim, Hyo Sung Kang and Choong Seon Hong (Kyung Hee University, Korea)

[O9-4] ONU-based Decentralized Dynamic Bandwidth Allocation (OD-DBA) Scheme Over WDM Long-Reach EPONs
Hai-Tang Lin, Chia-Lin Lai, Yu-Ying Kao and Tzy-Shiah Wang (National Cheng Kung University, Taiwan)

ORAL SESSION 10
Cloud and Mobile communication
Chair: JongWon Kim (GIST)

[O10-1] SaaS Virtualization Method and Its Application
Heiichiro Yamaguchi and Masayuki Ida (Aoyama Gakuin University, Japan)

Sunwook Kim, JiHyuk Choi, Seongwoon Kim and Hyongwan Kim (Electronical Telecommunication Research Institute, Korea)

Hassan Mahmood Khan, Gaik-Yee Chan and Fang-Fang Chua (Multimedia University, Malaysia)

Kirin P., Jibukumar M. G. and Pramukkumar C. V. (Cochin university, India)

[O10-5] A Multiple Beam Management Scheme on 5G Mobile Communication Systems for Supporting High Mobility
Jun Suk Kim, Won Jie Lee and Min Young Chung (Sungkyunkwan University, Korea)

January 15, 2016 (Friday)

ORAL SESSION 11
Load balancing and Offloading
Chair: Gaik-Yee Chan (Multimedia Univ.)

[O11-1] A Multihop Data-Gathering Scheme Using Multiple AUVs in Hierarchical Underwater Sensor Networks
Jawaad Ullah Khan and Ho-Shin Cho (Kyungpook National University, Korea)

[O11-2] The Dynamic Sub-Topology Load Balancing Algorithm for Data Center Networks
Yeongjin Kim (KAIST, Korea); Joohyun Lee (The Ohio State University, USA); Jaeseong Jeong (KTH Royal Institute of Technology, Sweden); Song Chong (KAIST, Korea)

[O11-4] Wireless Offloading
Jani Väre, Kimmo Ylände and Kari Virtanen (Teleste Corporation, Finland)

ORAL SESSION 12
Location-based services
Chair: HyungJune Lee (Ewha Womans Univ.)

Hailong Lin and Lei Chen (East China Normal University, P.R. China)

[O12-2] A Feasibility Study of ARPS in UAT for Positioning
Kyunan Lee, Jaesung Lim and Sanju Choi (Ajou University, Korea)

Zhaoyu Zhang, Xin Di, Jun Tian and Pei Chen (Fujitsu R&D Center Co., Ltd., P.R. China)

[O12-4] A Study on the Adaptation of the Firefly Algorithm for the Synchronization Between Multiple Controllers in SDN Environment
Green Kim and Keecheon Kim (Konkuk University, Korea)
January 14, 2016 (Thursday)

09:00-10:00

POSTER SESSION 1
Cloud and Mobile communication
Chair: Young-June Choi (Ajou Univ.)

[P1-1] A Distributed Mobile Cloud Computing Model for Secure Big Data
Soonhwa Sung, Cheong Youn, Eunbae Kong and Jaecheol Ryou
(Chungnam National University, Korea)

[P1-2] Service Recommendation System for Big Data Analysis
Tai Yeon Ku and Hwi-Sun Won (Electronics and Telecommunications Research Institute, Korea); Hoon Choi (Chungnam National University)

[P1-3] Analytics-leveraged Box Visibility for Resource-aware Orchestration of SmartX Multi-site Cloud
Jungsu Han and JongWon Kim (Gwangju Institute of Science & Technology, Korea)

Anupam Bharagi, Md. Golam Rabbiul Alam, Avishek Talukder, Tran Hong Nguyen, Da Eun Lee and Choong Seon Hong (Kyung Hee University, Korea)

[P1-5] P2P Network Organization Method for Low Signaling Overhead and Delay
Changkyu Lee, Wook Hyun, Shingak Kang and Juyeong Kim (Gwangju Institute of Science & Technology, Korea)

[P1-6] SIP Amplification Attack Analysis and Detection in VoLTE Service Network
Eunhye Ko, Seongimin Park, Seokwon Kim, Kyungho Son and Hwankuk Kim (Korea Internet & Security Agency, Korea)

[P1-7] SDN-based Distributed Mobility Management
Hyun Sik Yang and Younghan Kim (Soongsil University, Korea)

[P1-8] Design of Distributed Memory Integration framework (DMIf)
Shin Young Ahn, Gyul Cha, Youngho Kim, Eunji Lim, Seungjo Bae and Won-Young Kim (Electronics and Telecommunications Research Institute, Korea)

[P1-9] An Experimental Continuous Delivery Framework for SmartX-mini IoT-Cloud Playground
Jeongu Bae and JongWon Kim (Gwangju Institute of Science & Technology, Korea)

POSTER SESSION 2
IoT and Middleware
Chair: TBA

[P2-1] Ontology-based Open API Composition Method for Automatic Mash-up Service Generation
Sang Il Kim and Hwa Sung Kim (Kwangwoon University, Korea)

[P2-2] Design of an Effective Framework for Mash-up Service Development
Taeyoung Kim, Hyeonwoo Kim, Dongwooi Kwon, Kisun Ok, Isaac Im, Eunggi Lee, Huijewang Je, Nematiullo Rakhmatov, Donghyeon An and Hongtaek Ju (Keimyung University, Korea)

[P2-3] A Study on Movable Thing Edge Service Platform
Eungha Kim and Changsup Keum (Electronics and Telecommunications Research Institute, Korea)

[P2-4] oneM2M _Extension of Protocol Binding (Reuse of Binding Protocol’s Legacy Services)
Jun Hwan Huh, Dong Hyun Kim and Jong Deok Kim (Pusan National University, Korea)

[P2-5] The Cluster Formation Strategies for Approximate Decoding in IoT Networks
Minhac Kwon and Hyunggon Park (Ewha Womans University, Korea)

[P2-6] IoT Learning Model Based on Virtual Object Cognition
Muhammad Golam Kibria, Hwa-Suk Kim and Ilyoung Chong (Hankuk University of Foreign Studies, Korea)

[P2-7] Design of Composite Virtual Objects for Service Entity Creation in WoO Based IoT Environment
Sheik Mohammad Mostakim Fattah, Hwa-Suk Kim and Ilyoung Chong (Hankuk University of Foreign Studies, Korea)

[P2-8] Programmable Multi-hop Wireless Networks Towards IoT Architecture and Key Techniques
Xin Di, Jun Tian, Jie Wu and Zhao Zhu (Fujitsu R&D Center, P.R. China)

[P2-9] Topic Naming Service for DDS
Gunjae Yoon, Jungwoong Choi, Huihwan Park and Hoon Choi
(Kwangnam National University, Korea)

15:00-16:00

POSTER SESSION 3
Wireless networks
Chair: TBA

[P3-1] A Network Coding Aware Routing with Considering Traffic Load Balancing for the Multi-hop Wireless Networks
Minho Jeong and Sanghyun An (University of Seoul, Korea); Hayoung Oh (Soongsil University, Korea)

[P3-2] Channel Modeling and System Analysis for Seaside Image Sensor Communications
Chang Hyun Hong, Trang Nguyen (Kookmin University, Korea); Seong-Joo Chung (Kwangwoon University, Korea)

[P3-3] Efficient Parallel Multi-path Interest Forwarding for Mobile User in CCN
Doo Ho Lee, Kyi Than, DoHyeon Kim and Choong Seon Hong (Kyung Hee University, Korea)

[P3-4] Channel Bonding Algorithm for Densely Deployed Wireless LAN
Taewon Song, Tae-Yoon Kim, Wonjung Kim and Sangheon Park (Korea)
Poster Sessions

University, Korea)

[P3-5] Design and Implementation of Access Point for the Wi-Fi Broadcasting System
Dong Hyun Kim, Sheng Hao Sun and Jong Deok Kim (Pusan National University, Korea)

Hyungkeun Lee and Hyukjoon Lee (Kwangwoon University, Korea)

[P3-7] Improving Time Slot Acquisition Through RSU’s Coordination for TDMA-based MAC Protocol in VANETs
VanDung Nguyen, Oanh Tran Thi Kim, Tri Nguyen Dang and Choong Seon Hong (Kyung Hee University, Korea)

[P3-8] An Energy Efficiency Evaluation Scheme for Manufacturing Facility
Sangin Jeong and Yong-Woon Kim (Electronics and Telecommunications Research Institute, Korea)

Nguyen Trong Thuong, Hoac Thieu Phong, Dinh-Thuan Do, Phan Van Hieu and Dao Tang Loc (Eastern International University, Vietnam)

POSTER SESSION 4
SDN and PHY
Chair: TBA

[P4-1] A Congestion Avoidance Algorithm in SDN Environment
Seungbeom Song, Jaiyong Lee, Kyuho Son, Hangyong Jung and Jihun Lee (Yonsei University, Korea)

[P4-2] Evaluations of a Multiple Flow Tables Construction Scheme for Service Function Chaining
Eun-Do Kim (University of Science and Technology, Korea); Seungik Lee, YunChul Choi, Myung-Ki Shin and Hyoung-Jun Kim (Electronics and Telecommunications Research Institute, Korea)

[P4-3] Resource Monitoring and Visualization for of@tein SDN-enabled Multi-site Cloud
Muhammad Usman, Aris Cahyadi Risdianto and JongWon Kim (Gwangju Institute of Science & Technology, Korea)

[P4-4] A Frame Buffer Caching for Fast Launch of Browsers
Kyusik Kim and Tae suk Kim (Kwangwoon University, Korea)

[P4-5] Multi-band OFDMA Based Passive Optical Network with Windowing Technique for Asynchronous Multiple Access
Chang-Hun Kim, Sung-Min Jung, Sun-Young Jung, Soo-Min Kang and Sang-Kook Han (Yonsei University, Korea)

[P4-6] InGaAs-based Junctionless Transistor with Dual-spacer Dielectric for Low Power Loss and High Frequency Mobile Network System
Young Jun Yoon, Jaehyun Seo, Rahee Kwon, Young In Jang and In Man Kang (Kyungpook National University, Korea)

[P4-7] A Fast Convergence LLL Algorithm with Fixed-Complexity for SIC-based MIMO Detection
Hyukyeon Lee, Hyunsuk Kim, Minjoon Kim and Jaeseok Kim (Yonsei University, Korea)

Jae Hwa Seo, Young Jun Yoon, Rahee Kwon, Young In Jang and In Man Kang (Kyungpook National University, Korea)

January 15, 2016 (Friday)
09:00-10:00

POSTER SESSION 5
Security, Service and Streaming
Chair: TBA

[P5-1] Fast User Authentication Method Considering Mobility in Multi Clouds
Jinsook Bong, Yuhwa Suh and Yongtae Shin (Soongsil University, Korea)

[P5-2] Network Defense System for Detecting and Preventing Potential Hacking Attempts
Saad Alsunbul (King Abdulaziz City for Science and Technology, Saudi Arabia); Phu Le (Monash University, Australia); Jefferson Tan (IBM Research Australia, Australia); Bala Srinivasan (Monash University, Australia)

[P5-3] A Study on Behavior-Based Mobile Malware Analysis System Against Evasion Techniques
Mijoo Kim, Youngsang Shin, Tai Jin Lee (KISA, Korea); Heung Youl Youn (SoonChunHyang University, Korea)

[P5-4] Vulnerability Detection Mechanism Based on Open API for Multi-User’s Convenience
Sung Soo Kim, Da Eun Lee and Choong Seon Hong (Kyung Hee University, Korea)

[P5-5] Securing Information Flow in Content Delivery Networks with Visual and Quantum Cryptography
Nishat I Mowla, Inshil Doh and Kijoon Chae (Ewha Womans University, Korea)

[P5-6] Collaborative Local Triangles Counting in a Graph Stream by Using Node Resources
Kim Jiyoung and Min Ok Gee (ETRI, Korea)

Svetlana Kim and Yong-Ik Yoon (Sookmyung Women University, Korea)

[P5-8] Efficient Streaming Over CoAP
Gyuhoong Choi, Dohyung Kim and Ikjun Yeom (Sungkyunkwan University, Korea)

[P5-9] Optical Camera Communications Based Invisible Watermarking Technique
Nam-Tuan Le, Thithanhnhan Le and Yeong Min Jang (Kookmin University, Korea)
Venue & Accommodation

Hotel
Located just 28km from the city and 38km from Kota Kinabalu International Airport, Nexus Resort & Spa Karambunai is set amidst 3,335 acres of natural and landscaped surroundings creating the perfect background for all 485 well-appointed guestrooms, suites and luxury villas. The award-winning 18-hole championship golf course and exclusive Borneo Spa complement the superb facilities of this magnificent resort which boasts eight restaurants and bars and an almost endless array of leisure and recreational activities.

Address
off Jalan Sepanggar Bay
Locked Bag 100
Sabah, 88993
Kota Kinabalu, Malaysia
Phone: +60 88-480 888

Direction
Situated on the spectacular Karambunai Peninsula, upon 3,335 acres of natural and landscaped surrounds, the resort is just 30 minutes from Kota Kinabalu city, the capital and gateway to Sabah, and only 40 minutes from Kota Kinabalu International Airport and Terminal 2 Kota Kinabalu. Transfers to the resort can easily be arranged by coach, private limousine or taxi.
Nexus Resort & Spa Karambunai is accessible via direct or single-stop flights from the nation's capital Kuala Lumpur and several major Asian cities such as Singapore, Bangkok, Sydney, Melbourne, Manila, Taipei, Hong Kong, Seoul, Tokyo, Guangzhou and Xiamen.

Ocean Panorama Deluxe
The 5-storey 243 rooms resort-themed building offers guests panoramic views of the ocean, the white sandy beach and the botanical gardens. Access to all guestrooms at every floor is through an open corridor. Meandering like a restful Rungus longhouse, the Ocean Panorama was built to complement the serene village charm of Borneo Villa. As with the Borneo Villa Deluxe rooms, each Ocean Panorama room features a private balcony or verandah.
Services & Amenities
Eight different restaurants and bars whet the appetites of even the most selective gourmets. Savour delightful Malaysian cuisine in the traditional village-like setting of the Kingfisher Malaysian Restaurant with its tremendous local delicacies or bountiful ala-carte at the Penys, All Day Dining. For the finer points on Mediterranean cuisine, dine at the exquisite, award-winning Olives Mediterranean Restaurant. The Noble House Chinese Restaurant showcases superb Szechuan cuisine and homemade dim sum whilst Seoul Fairway & Grill offers variety of Korean dishes with the background of the panoramic view of award winning Karambunai Golf course. The Muffins offers signature cakes, pastries and an extensive selection of coffee and tea. The Sunset Bar & Grill is the resort’s casual hub of activity, with pizzas, char-grilled favorite’s and more. Splashes Pool Bar provides a convenient watering hole for poolside drinks, snacks and cocktails with Darlin’ Darlin’ Fun Pub topping off each evening in paradise in party mood with fabulous entertainment by a powerhouse band.

Weather
Kota Kinabalu is almost always warm and humid. Temperatures do not vary much from 74°F to 85°F or 23°C to 30°C.

Nearby Attractions
- 1Borneo Hypermall – 15km
- Crocodile Farm – 8km
- Sea Gypsy Mangrove Village – 5km

Hotel Reservation
To make a room reservation at the conference rate, follow the steps:
1. Download the hotel reservation form from the ICOIN 2016 website.
   Booking Form: English, Korean
2. Fill out the reservation form.
3. FAX or email the form to
   FAX: +82-2-6944-8208
   PHONE: +82-2-745-8282
   Email: icoin@clubbali.co.kr