

The 19th International Conference on Advanced Communications Technology

“Opening New Era of Smart Society”

<http://www.icact.org>

Phoenix Park, Pyeongchang
Korea (South)
Feb. 19 ~ 22, 2017



PROCEEDING & JOURNAL

IEEE Catalog Number: CFP17561-CDR
ISBN: 978-89-968650-8-7
ISSN: 1738-9445

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THE IEEE 19th INTERNATIONAL CONFERENCE ON ADVANCED COMMUNICATIONS TECHNOLOGY

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Message from the ICACT2017 General Chair

On behalf of all the ICACT2017 international conference committees, we would like to welcome all of you to ICACT2017. It is a great pleasure for us to host the 19th IEEE International Conference on Advanced Communications Technology (ICACTION) at the Phoenix Park, PyeongChang, Korea.

The ICACTION is annual international conference in the communications field, where all experts from home and abroad come together to present their work, and share new ideas and visions for achieving the future telecommunications age.



ICACTION2016, was successfully held with the selected 168 papers among 435 submissions, thus the acceptance rate was 39%. In which there were 168 oral session papers. The 168 oral session papers presented by the 89 foreign and 79 domestic 1st authors from the 22 participant countries. All the presented papers will be registered in IEEE Xplore Digital Library, and indexed by SCOPUS, EI Compendex, INSPEC, and Conference Proceedings Citation Index (CPCI), etc.

The special theme of ICACTION2017 is focussed on the “*Opening New Era of Smart Society!*”. We expect that the ICACTION2017 will play a pivotal role in order to make great contribution to make our world smarter and prosperous. We are very certain that ICACTION2017 will be great significance to us all, and we hope you will enjoy both the technical excellence during the sessions and the recreational content of the Pyeongchang 2018 Winter Olympics place in Korea (South). We are looking forward to seeing you at upcoming ICACTION conference.

SUH Byung-jo

President of National Information Society Agency (NIA), Korea

Message from the Organization and Operation Committee Chair

With technically co-sponsored by IEEE ComSoc(Communications Society), IEEE ComSoc CISTC(Communications & Information Security Technical Community), and IEEE ComSoc ONTC(Optical Networking Technical Community), the ICACT(International Conference on Advanced Communications Technology) Conference has been providing an open forum for scholars, researchers, and engineers to the extensive exchange of information on newly emerging technologies, standards, services, and applications in the area of the advanced communications technology.



The conference official language is English. All the presented papers have been published in the Conference Proceedings, and posted on the ICACT Website and IEEE Xplore Digital Library since 2004. The honorable ICACT Out-Standing Paper Award list has been posted on the IEEE Xplore Digital Library also, and all the Out-Standing papers are subjected to the invited paper of the "ICACT Transactions on the Advanced Communications Technology" Journal issued by GiRI(Global IT Research Institute) accredited by Korea Government(Reg. No. 220-82-07506) hosting the ICACT Conference .

All the papers will be indexed and abstracted by several global academic societies such as SCOPUS, INSPEC, Engineering Index (EI), Conference Proceedings Citation Index (CPCI), etc.

Prof. Thomas Byeong-Nam Yoon, PhD.
Chair, ICACT2017 Organization & Operation Committee
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Objectives



International Conference on Advanced Communications Technology (ICACT) provides an open forum for researchers, engineers, policy makers, network planners, and service providers in telecommunications. Extensive exchange of information will be provided on newly emerging systems, standards, services, and variety of applications on the area of telecommunications.

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Prof. Chang-Bong Kim, Kongju National University, Korea
Dr. Ahmed AbdelAziz, Arab Academy for Science and Technology, Egypt
Prof. Mohamed RIZK, Alexandria University, Egypt
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Dr. Yong Sun, Beijing University of Posts and Telecommunications, China
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Dr. Hyung-soon Kim, National Information Society Agency, Korea
Mr. Yoon-seok Ko, National Information Society Agency, Korea
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Mr. Ahn Hyun, Kyonggi University, Korea
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Mr. Lee Sun-Ho, Kyonggi University, Korea
Ms. Ji-Eun LEE, Ehwa Woman s University, Korea
Mr. Jeong Hyeon Il, Kyonggi University, Korea
Ms. Kim Mee Sun, Kyonggi University, Korea
Mr. Lee Do Kyeong, Kyonggi University, Korea
Ms. Joo-Hee Yoo, Kyunghee University, Korea

The Program of ICACT 2017 (Session Overview)

Day 1 : February 19 (Sunday)

16:00 ~ 17:30	Registration (Phoenix Ballroom Front Floor Desk)	
Time	Session	Room(Phoenix 1)
16:00 ~ 18:00	Tutorial	Title: Web Hacking & Defensing - Web hacking is nothing more than the skill of this century! Speaker: Prof. Thomas Byeong-Nam Yoon, PhD.

Day 2 : February 20 (Monday)

09:00 ~ 17:00	Registration (Phoenix Ballroom Front Floor Desk)					
Time	Session	A	B	C	D	P
		Ruby	Emerald	Diamond 1	Diamond 2	Phoenix 1
10:00 ~ 11:30	Session 1	1A Mobile & Wireless Communication 1	1B Ubiquitous & Sensor Network 1	1C Information & Network Security 1	1D Network Management 1	1E Distributed & Cloud Computing 1
	Chair	Dr. Pisit BOONSIRIMUANG	Dr. Seong-Soon Joo	Prof. Da-Yu Kao	Prof. MinHo Kang	Dr. Mangal Sain
11:30 ~ 12:30	Lunch					
12:30 ~ 14:00	Session 2	2A Mobile & Wireless Communication 2	2B Ubiquitous & Sensor Network 2	2C Information & Network Security 2	2D Network Management 2	2E Distributed & Cloud Computing 2
	Chair	Prof. Bing-Yuh Lu	Dr. S.H. Shah Newaz	Prof. Swee-Huay Heng	Prof. Rosilah Hassan	Prof. Sun-Moo Kang
14:00 ~ 14:30	Coffee Break					
14:30 ~ 16:00	Session 3	3A Mobile & Wireless Communication 3	3B IPTV & Internet Telephony	3C Information & Network Security 3	3D NGN, BCN, Future Network	3E Web Service & Future Web 1
	Chair	Mr. Sangwoon Kwak	Prof. Da-Yu Kao	Dr. Erdenechimeg Damdinsuren	Dr. S.H. Shah Newaz	Dr. Sani Muhamad Isa
16:00 ~ 16:30	Coffee Break					
16:30 ~ 17:30	Plenary Session (Phoenix ballroom 1, 2) - Chair : Prof. Kwanghoon Kim Keynote Speech: 2018 Pyeongchang Winter Olympics exalted by 5G ICT Technology!! Speaker: Dr. Sangjin Oh, Director General of Ministry of Science, ICT and Future Planning (MSIP), Korea					
17:30 ~ 18:00	Coffee Break					
18:00 ~ 20:00	Opening Ceremony & Banquet (Phoenix ballroom 1, 2, 3) Welcome Address : SUH Byung-jo(President of National Information Society Agency, Korea), General Chair Congratulatory Address : Prof. Byeong-Gi Lee, ISC Chair Agenda of Plenary : Prof. Byeong-Nam Yoon, OOC Chair * Toast for Opening Ceremony & Banquet					

Day 3 : February 21 (Tuesday)

Registration (Phoenix Ballroom Front Floor Desk)						
Time	Session	A	B	C	D	E
		Ruby	Emerald	Diamond 1	Diamond 2	Phoenix 1
10:00 ~ 11:30	Session 4	4A Mobile & Wireless Communication 4	4B ITS & Telematics 1	4C Information & Network Security 4	4D Big Data & Search Engine 1	4E Web Service & Future Web 2
	Chair	Mr. Sunghyun Kim	Prof. Sun-Moo Kang	Prof. Rosilah Hassan	Prof. Kwanghoon Kim	Dr. Mangal Sain
11:30 ~ 13:00	Lunch					
13:00 ~ 14:30	Session 5	5A Mobile & Wireless Communication 5	5B ITS & Telematics 2	5C Application & Biometric Security	5D Big Data & Search Engine 2	5E Web Service & Future Web 3
	Chair	Prof. Woo-Yong Choi	Dr. Jihyun Lee	Dr. Jungju Yoo	Dr. Hyung-soon Kim	Dr. Seong-Soon Joo
14:30 ~ 15:00	Coffee Break					
15:00 ~ 16:30	Session 6	6A Mobile & Wireless Communication 6	6B Software Platform & Smart Service 1	6C Systems & Software Engineering 1	6D Big Data & Search Engine 3	6E Web Service & Future Web 4
	Chair	Dr. Hyeong Ho Lee	Dr. Jungju Yoo	Prof. Bing-Yuh Lu	Prof. Yu-ning Dong	Dr. Ruslan Kirichek
16:30 ~ 17:00	Coffee Break					
17:00 ~ 18:30	Session 7	7A Mobile & Wireless Communication 7	7B Software Platform & Smart Service 2	7C Systems & Software Engineering 2	7D Big Data & Search Engine 4	
	Chair	Prof. Francis C.M. LAU	Dr. Ruslan Kirichek	Dr. Sani Muhamad Isa	Dr. Taeho Jo	

Day 4 : February 22 (Wednesday)

Registration (Phoenix Ballroom Front Floor Desk)						
Time	Session	A	B	C	D	E
		Ruby	Emerald	Diamond 1	Diamond 2	Phoenix 1
10:00 ~ 11:30	Session 8	8A Mobile & Wireless Communication 8	8B Software Platform & Smart Service 3	8C Systems & Software Engineering 3	8D Big Data & Search Engine 5	
Chair	Prof. Woo-Yong Choi	Prof. Byeongnam Yoon	Prof. Kwanghoon Kim	Dr. Minjae Park		
11:30 ~	See you at the next ICACT2018!					

Day 1: Feb. 19 (Sunday)

Tutorial Session : 16:00 ~ 18:00	Phoenix Ballroom
<p>Title: Web Hacking & Defensing - Web hacking is nothing more than the skill of this century!</p> <p style="text-align: right;">Speaker: Prof. Thomas Byeong-Nam Yoon, PhD. (Chair, ICACT2017 Organization & Operation Committee Editor-in-Chief, TACT Journal)</p>	
<p>Speaker's Biography:</p> <p>He was born in Seoul Korea. He is organizer of this conference & ICACT-TACT Journal, was professor in faculty of Computer Science, Kyonggi University (KGU) 2010~2016 and in charge of the Future Internet Lab, affiliated professor in faculty of Information & Communications, Hankuk University of Foreign Studies (HUFS) 1999 ~ 2007 in Korea. He obtained his BSc from Hanyang University, MSc from Chungju University, and PhD from Chungnam National University, Korea. He has been accredited as a Computer System Specialist by UNIVAC, Princeton USA 1975, a Telecom System Specialist by ALCATEL, Antwerp Belgium 1979, a Telecom System Designer by LME, Stockholm Sweden 1983. a SPICE Assessor by ISO/IEC 15504 Information technology – Process assessment 2000. He was Chair of Asian Infocom Council (AIC) Asian 9 Countries 1997-2003. He was Computer Specialist in Sperry Rand UNIVAC USA 1974-1978, M10CN Section Manager in Samsung 1978-1982, Communications System Development Project Manager of TDX/CDMA, ISDN, Intelligent Network, HiTEL/PC, ATM, MPLS/Router in ETRI 1982-1999, National Grand Project Manager of the Korea Information Super Highway, eGovernment, ASP for SMEs, Internet Switching Center for ISPs, IPv6 center, RSA eSignature Center & National Back-up Center for eGovernment in NIA 1999-2009, Korea.</p> 	
<p>Abstract:</p> <p>We all know that Web hacking is nothing more than the skill of this century. So what does it means? It means that not everyone can get that skill. so you can see how privileged is to know Web hacking, in other hands its just like a sport, some are born with the talent, some have to practice a lot to get the necessary skills. The reason why a lot of newbies and non-professional hackers fail to get a successful Web hacking is because they don't want to scrutinize closely, most of time they want a magic button where they can click and that's all. But in the reality it does not work like that, the first thing you have to do is a good knowledge about Web technologies, for those familiar with the software development is easier to understand what I mean, you can not develop a good software without a good work method. Thus, in this tutorial covers fundamental Web technologies, useful hacking tools and methods with showing real time demonstrations so far time allowed. It shall be good enough for you to be good white hacker as a first step, take a cup of coffee, grab your chair, and start to enjoy this what I am going to show you. Lastly I wanna wish happy new year and happy hacking for you all!</p> <p>Keywords: HTTP, Cookie, XSS, SQL Injection, PAROS, JDK, Server Side Program, Java Script, Weblog, Logparser</p>	

Day 2: Feb. 20 (Monday)

Plenary Session : 16:30 ~ 17:30	Phoenix Ballroom
<p>Keynote Speech: 2018 Pyeongchang Winter Olympics exalted by 5G ICT Technology!! Speaker: Director General, Oh Sang-jin (Ministry of Science, ICT and Future Planning (MSIP), Korea)</p>	
<p>Speaker's Biography:</p> <p>Oh Sang-jin works as Director General of Technology Bureau, PyeongChang Organizing Committee for the 2018 Olympics & Paralympic Winter Games (POCOG). Recently he joined POCOG to prepare ICT S/W, H/W and infrastructure for 2018 winter Olympic Games in Pyeong-Chang in Korea. He has usually worked as a public employee in Korean government for ICT promotion role since 1993. He has built his career and experience in Ministry of Science, ICT and Future Planning, the President's Office, Korea Communications Commission and Ministry of Information and Communications. He studied electrical engineering in Hanyang University in Seoul (89 ~ '93), and received MBA from University of Oregon, USA ('03 ~ '05).</p> 	
<p>Abstract:</p> <p>Olympics and ICT. Introduce the Olympics and Pyeong-Chang winter Olympic games. Plan for building up ICT infrastructure to support the games and new technologies to apply for the Olympic games. Since approximately 1,500,000 people come here and spectate the games, and more than 3 billion people around world will watch the games on TV sets. Two important conditions for the ICT infrastructure. Number 1 is stability: Olympic systems should be stable and available in any case in game time. There will be no second chance for athletes. Nobody can not ask athletes to go back to the start line because of system malfunctions. It's impossible, so stability is utmost importance. Second one is cost effectiveness: Build up the massive infrastructure with limited resource. About new era, characterized as personalization, sharing and realistic services, mainly based on Giga-bit speed internet and 5G mobile service. Focusing on IoT, autonomous language translation, Big data, Virtual Reality, 3D technology and so on.</p>	

Day 2 : February 20 (Monday)

Time 10:00~11:30

Session 1A : Mobile & Wireless Communication 1		Room:	Ruby
Chair : Dr. Pisit BOONSRIMUANG, King Mongkut's Institute of Technology Ladkrabang, Thailand			
1A-01 006	End-to-End (e2e) Quality of Service (QoS) For IPv6 Video Streaming Rosilah Hassan*, Rana Jabbar* <i>Universiti Kebangsaan Malaysia, MALAYSIA</i>		
1A-02 081	Operating Frequency Improvement on FPGA Implementation of a Pipeline Large-FFT Processor Ting-wai Siu!, Chiu-Wing Sham! and Francis C. M. Lau!† <i>*Hong Kong Polytechnic University, Hong Kong, †Hong Kong Polytechnic University Shenzhen Research Institute, China</i>		
1A-03 098	Trade-Off between Spectral Efficiency and Energy Efficiency in Multi-Cell Uplink Networks Hyunwoo Nam and Bang Chul Jung <i>Chungnam National University, Korea</i>		
1A-04 099	On the Spectral Analysis of Discrete-Time Faster-Than-Nyquist Signaling Sangwoon Kwak, Joungil Yun, Hyoungsoo Lim and Namho Hur <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
1A-05 143	On-Demand Anchor-based Mobility Support Method for Named Data Networking Dabin Kim* and Young-Bae Ko* <i>*Ajou University, Korea</i>		

Day 2 : February 20 (Monday)

Time 10:00~11:30

Session 1B : Ubiquitous & Sensor Network 1		Room:	Emerald
Chair : Dr. Seong-Soon Joo, ETRI, Korea(South)			
1B-01 071	Rethinking of Feature Selection Method for Room-Level Localization using Public APs Youngsam Kim* and Soohyung Kim* <i>*Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
1B-02 101	An Efficient ILACS Control Algorithm for Intelligent LED Indoor Lighting System Sung-IL Hong, Chi-Ho Lin <i>Semyung University, Korea</i>		
1B-03 107	Semi-Supervised Radio Signal Identification Timothy J. O'Shea*, Nathan West**, Mathew Vondral* and T. Charles Clancy* <i>*Virginia Tech, USA, **Oklahoma State University, USA</i>		
1B-04 205	Wireless monitoring method for diabetic foot temperature D.Erdenechimeg, D.Enkhzul, O.Munkhtamir, B.Enkhbat <i>Mongolian University of Science and Technology, Mongolia</i>		
1B-05 369	A Medium Access Control for the Infraless Peer Aware Communication Networks Seong-Soon Joo, Kwihoon Kim, Nae-Soo Kim and Cheol-Sik Pyo <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>		

Day 2 : February 20 (Monday)

Time 10:00~11:30

Session 1C : Information & Network Security 1		Room: Diamond 1
Chair : Prof. Da-Yu Kao, Central Police University, Taiwan		
1C-01	Network Abnormal Behavior Analysis System	
007	Sunoh Choi, Yangseo Choi, Jooyoung Lee, Jonghyun Kim and Ikkyun Kim <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
1C-02	An Adaptive Honeypot Configuration, Deployment and Maintenance Strategy	
025	Daniel Fraunholz, Marc Zimmermann, Hans D. Schotten <i>German Research Centre for Artificial Intelligence, Germany</i>	
1C-03	On the Security of Two Sealed-Bid Auction Schemes	
035	Kin-Woon Yeow, Swee-Huay Heng and Syh-Yuan Tan <i>Multimedia University, Malaysia</i>	
1C-04	LTE for Military Communication - Business Models and Vulnerabilities	
065	Bodil Farsund*, Anne-Marie Hegland**, Frode Lillevold* <i>*Norwegian Defence Research Establishment (FFI), Norway, **Kongsberg Defence & Aerospace, Norway</i>	
1C-05	Non-Redundant Indirect Trust Search Algorithm Based on a Cross-Domain Trust Model in Content Delivery Network	
255	Shi Li, Inshil Doh, Kijoon Chae <i>Ewha Womans University, Korea</i>	

Day 2 : February 20 (Monday)

Time 10:00~11:30

Session 1D : Network Management 1		Room: Diamond 2
Chair : Prof. MinHo Kang, KAIST (Univ.), Korea(South)		
1D-01	On the Effects of Resource Usage Ratio on Data Rate in LTE Systems	
036	Sunghyun Hwang, Seungkeun Park <i>*Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
1D-02	The Architecture of Generic VNF using TOSCA	
043	Byung Yun Lee*, Bhum Cheol Lee* <i>*Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
1D-03	NFP Brokering for VNF Chaining Models	
048	TaeYeon Kim and BhumCheol Lee <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
1D-04	Intelligent Driver Safety System Using Fatigue Detection	
342	Samra Naz*, Aneeqa Ahmed*, Qurat ul Ain*, Irum Naushin** <i>*National University of Sciences and Technology Islamabad, **International Islamic University</i>	

Day 2 : February 20 (Monday)

Time 10:00~11:30

Session 1E : Distributed & Cloud Computing 1		Room: Phoenix 1
Chair : Dr. Mangal Sain, Dongseo University, Korea(South)		
1E-01 087	Evaluation of Task Clustering Algorithm by FFT for Heterogeneous Distributed System Shuya Hashimoto*, Emilia Ndilokelwa Weyulu*, Kazuo Hajikano**, Hidehiro Kanemitsu***, Moo Wan Kim* <i>*Tokyo University of Information Sciences, Japan, **Daiichi Institute of Technology, Japan, ***Waseda University, Japan</i>	
1E-02 140	A Design of the Flow Switch for the Cloud based Network Function Virtualization Kang Il Choi, Bhum Cheol Lee <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
1E-03 141	Declarative Policy Support for Cloud Application Orchestration Kena Alexander*, Choonwha Lee**, and Seungmok Chai* <i>Hanyang University, Korea</i>	
1E-04 208	Multilevel cloud based Tactile Internet system Abdelhamied A. Ateya*, Anastasia Vybornova*, Ruslan Kirichek*, Andrey Koucheryaw* <i>*State University of Telecommunication, Russia</i>	
1E-05 181	Computation Offloading Strategy for Multi User Mobile Data Streaming Wei Liu, WanJia Gong, Wei Du, Chengming Zou <i>Wuhan University of Technology, Wuhan, China</i>	

Day 2 : Febuary 20 (Monday)

Time 12:30~14:00

Session 2A : Mobile & Wireless Communication 2		Room:	Ruby
Chair : Prof. Bing-Yuh Lu, Tunghan University, Taiwan			
2A-01 119	A Dual Preamble Random Access Protocol for Reducing Access Congestion in Disaster Situations Seung Beom Seo*, Wha Sook Jeon*, and Dong Geun Jeong** <i>*Seoul National University, Korea, **Hankuk University of Foreign Studies, Korea, **CNU (Chungnam National University),, Korea</i>		
2A-02 202	Bit Error Rate Expression of MC-CDMA System in α - μ Fading Channel Chirawat Kotchasam <i>Rajamangala University of Technology Thanyaburi, THAILAND</i>		
2A-03 285	Incremental Hybrid DAF Scheme based Cooperative Spatial Modulation Na Zhang*, Zhiqian Bai*, Qi Zhang*, Shangqian Sun*, and Kyungsup Kwak** <i>*Shandong University Jinan, China, **INHA University, Korea</i>		
2A-04 117	System Design and Performance Evaluation of High Altitude Platform: Link Budget and Power Budget Ali Nauman, Moazam Maqsood <i>Institute of Space Technology, Islamabad, Pakistan</i>		
2A-05 105	Improved PTS Method with New Weighting Factor Technique for FBMC-OQAM systems Amnart HANPRASITKUM*, Arjin NUMSOMRAN*, Pompawit BOONSRIMUANG**and Pisit BOONSRIMUANG* <i>*King Mongkut's Institute of Technology, Thailand, **Suan Sunandha Rajabhat University, Thailand</i>		

Day 2 : Febuary 20 (Monday)

Time 12:30~14:00

Session 2B : Ubiquitous & Sensor Network 2		Room:	Emerald
Chair : Dr. S.H. Shah Newaz, Universiti Teknologi Brunei (UTB), Brunei Darussalam			
2B-01 080	Experimental Realization of Multi-Service RoF system using OCS-PolMux Techniques M. H. Mohamad Nor*, T. Kanesan*, F. Maskuriy*, A.Yusof*, F.A.Fatah* and S. B. A. Anas** <i>*Telekom Research & Development (TM R&D), Malaysia, **Universiti Putra Malaysia, Malaysia</i>		
2B-02 109	Towards Realizing the Importance of Placing Fog Computing Facilities at the Central Office of a PON S.H. Shah Newaz*, Wida Susanty binti Haji Suhaili*, Gyu Myoung Lee**, ***, Mohammad Rakib Uddin*, Alaelddin Fuad Yousif Mohammed**, and Jun Kyun Choi** <i>*Universiti Teknologi Brunei (UTB), Brunei, **3Korea Advanced Institute of Science and Technology (KAIST), Korea, ***Liverpool John Moores University, United Kingdom</i>		
2B-03 432	Software-Defined Architecture for Flying Ubiquitous Sensor Networking Ruslan Kirichek*, Andrei Vladyko*, Alexander Paramonov*, Andrey Koucheryav* <i>*The Bonch-Bruевич State University of Telecommunication, Russia</i>		
2B-04 439	Modeling Process-Aware Internet of Things Services over an ARDUINO Community Computing Environment Meesun Kim, Kyoungsook Kim and Kwanghoon Pio Kim <i>KYONGGI UNIVERSITY, Korea</i>		

Day 2 : February 20 (Monday)

Time 12:30~14:00

Session 2C : Information & Network Security 2		Room: Diamond 1
Chair : Prof. Swee-Huay Heng, Multimedia University, Malaysia		
2C-01 067	New Qubits Steganography Algorithm to Conceal a Secret File In Compressed edge detection operators Based on Optimized Adaptive Neural Networks YAHYA E. A. AL-SALHI, LU SONGFENG, Arkan A.G Al-Hamodi, Adel H.AL-Mter and Zhigang Zhang <i>Huazhong University of Science and technology, China</i>	
2C-02 077	Exploring the Cybercrime Investigation Framework of ATM Heist from ISO/IEC 27043:2015 Da-Yu Kao <i>Central Police University, Taiwan</i>	
2C-03 303	Evolving Neural Network Intrusion Detection System for MCPS Nishat Mowla*, Inshil Doh*, KiJoon Chae* <i>*Ewha Womans University, Korea</i>	
2C-04 330	Security Analysis of Hybrid Security Mechanisms for Heterogeneous Sensor Networks Mangal Sain, Ki Hwan Kim and Hoon Jae Lee <i>Dongseo University, Korea</i>	
2C-05 129	Network coordinate system using non-negative matrix factorization based on KL divergence Lixiang Chai*, Xiangyang Luo*, Fan Zhao*, Mingyue Li*, Siqi Liu* <i>*Zhengzhou Information Science and Technology Institute, China</i>	

Day 2 : February 20 (Monday)

Time 12:30~14:00

Session 2D : Network Management 2		Room: Diamond 2
Chair : Prof. Rosilah Hassan, Universiti Kebangsaan Malaysia, Malaysia		
2D-01 126	SDN-Enabled Network Virtualization for Industry 4.0 Based on IoTs and Cloud Computing Yi-Wei Ma*, Yung-Chiao Chen**,*** and Jiann-Liang Chen** <i>*Shanghai Maritime University, China, **National Taiwan University of Science and Technology, Taiwan, ***National Taiwan University, Taiwan</i>	
2D-02 131	Analysis of NDN Repository Architecture and its Improvement for I/O Intensive Applications Inchan Hwang, Dabin Kim, Young-Bae Ko <i>Ajou University, Korea</i>	
2D-03 312	VNF management method using VNF Group Table in Network Function Virtualization Chan-Ho Park, Dong-Ryeol Shin <i>Sungkyunkwan University, Korea</i>	

Day 2 : Febuary 20 (Monday)

Time 12:30~14:00

Session 2E : Distributed & Cloud Computing 2		Room:	Phoenix 1
Chair : Prof. Sun-Moo Kang, Kyunghee University, Korea(South)			
2E-01 070	Dynamic Replica Creation Strategy Based on File Heat and Node Load in Hybrid Cloud YaHui Zhao, ChunLin Li, LaYuan Li, Peng Zhang <i>Wuhan University of Technology, China</i>		
2E-02 191	Hotspot Management Strategy for Real-Time Log Data in MongoDB Boonyalit Oonhawatt, Natawut Nupairoj <i>Chulalongkorn University, Thailand</i>		
2E-03 426	A Communication Security Protocol for Ubiquitous Sensor Networks Mangal Sain, Ndibanje Bruce, Ki Hwan Kim, Hoon Jae Lee <i>Dongseo University, Busan, Korea</i>		
2E-04 022	A Framework of Universiti Kebangsaan Malaysia Patent: UKM Patent Rosilah Hassan, Abdullah A. Al-khatib and Wan Mohd Hirwani Wan Hussain <i>Universiti Kebangsaan Malaysia, MALAYSIA</i>		

Day 2 : Febuary 20 (Monday)

Time 14:30~16:00

Session 3A : Mobile & Wireless Communication 3		Room:	Ruby
Chair : Mr. Sangwoon Kwak, ETRI, Korea(South)			
3A-01 012	Least Congested Channel Recommendation for Uncoordinated Access Point Ahmad Tajuddin Samsudin, Norman Fadhil Idham Muhammad, Awang Ibrahim Awang Daud, Syaiful Nizam Yahya, Khalil Huzairi Ahmad <i>TM Research & Development Sdn. Malaysia</i>		
3A-02 047	Slot based Radio Resource Management for Low Latency in LTE-Advanced System Yousun Hwang, Jeasung Shin <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
3A-03 072	Ad Hoc WLAN Throughput Improvement by Reduction of RTS Range Emilia Weyulu, Taro Iwabuchi, Misu Takeshi, Masaki Hanada, Moo Wan Kim <i>Tokyo University of Information Sciences, Japan</i>		
3A-04 155	Efficient Data Uploading Based on Network Coding in LTE-Advanced Heterogeneous Networks Phuc CHAU, Toan Duc BUI, Yongwoo LEE, Jitae SHIN <i>Sungkyunkwan University, Suwon, Korea</i>		
3A-05 363	Media Independent Service for Software-Defined Radio Access Networks Hyeong Ho Lee*, **, Jin Seek Choi*** <i>*Electronics and Telecommunication Research Institute (ETRI), Korea, **UST (University of Science and Technology), Korea, ***Hanyang University, Korea</i>		

Day 2 : Febuary 20 (Monday)

Time 14:30~16:00

Session 3B : IPTV & Internet Telephony		Room:	Emerald
Chair : Prof. Da-Yu Kao, Central Police University, Taiwan			
3B-01 060	A Lightweight Personalized Image Preloading Method for IPTV System Wen-Chang Tsai*, Chih-Lung Ko*, Chi-Shi Liu* <i>*Telecommunication Laboratories Chunghwa Telecom Co., Ltd., Taiwan</i>		
3B-02 076	Practical Packet Analysis: Exploring the Cybercriminal behind the LINE Voice Calls Da-Yu Kao, Wen-Ying Wu <i>Central Police University, Taiwan</i>		
3B-03 096	Challenges of Integrating a VoIP Communication System on a VSAT Network Mamadou Alpha Barry*, James K. Tamgno*, Claude Lishou**, Renaud K. K. Maleka* <i>*DETIC Department, ESMT, Senegal, **LTI Laboratory, UCAD, Senegal</i>		
3B-04 148	A study of MXF Extension of mapping HEVC Stream for UHD Broadcasting Contents Production Se Yoon Jeong*, Jooyoung Lee, Jae-hyoun Yoo, Hui Yong Kim <i>ETRI (Electronics and Telecommunications Research Institute), Korea</i>		

Day 2 : February 20 (Monday)

Time 14:30~16:00

Session 3C : Information & Network Security 3		Room:	Diamond 1
Chair : Dr. Erdenechimeg Damdinsuren, School of Information and Communication Technology, Mongolia			
3C-01	Detection as a Service: A SDN Application		
102	Mehmoosh Monshizadeh*†, Vikramajeet Khatri*, Raimo Kantola† <i>*Nokia Bell Labs, Finland, †Aalto University, Finland</i>		
3C-02	Cloud Service Trustworthiness Assessment Based on Cloud Controls Matrix		
108	Jirayu Kanpariyasontorn, Twittie Senivongse <i>Chulalongkorn University, Thailand</i>		
3C-03	IOT Smart Bell Notification System Design and Implementation		
258	WOO-HYUN PARK, YUN-GYUNG CHEONG <i>Sungkyunkwan University, Korea</i>		
3C-04	A Study on One-way Communication using PF_RING ZC		
327	Jin-Hong Kim*, Jung-Chan Na** <i>* UST(Korea University of Science and Technology), Korea, ** ETRI(Electronics and Telecommunications Research Institute), Korea</i>		
3C-05	The Application of Quantum Communication Technology used in Electric Power Information & Communication System Confidential Transmission		
091	Liu Junwen*, Zhao Ziyang*, Hao Jiakai** <i>* State Grid Information & Telecommunication Branch, China, ** State Grid Beijing Electric Power Company, China</i>		

Day 2 : February 20 (Monday)

Time 14:30~16:00

Session 3D : NGN, BCN, Future Network		Room:	Diamond 2
Chair : Dr. S.H. Shah Newaz, Universiti Teknologi Brunei (UTB), Brunei Darussalam			
3D-01	Model of Transport SDN for Path Computation		
026	Chang-Gyu LIM*, Soo-Myung PAHK* <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
3D-02	Service Model for Smart Farming Services at the Pre-production Stage		
125	Soong-Hee Lee*, Dong-Il Kim**, Sok-Pal Cho***, Heechang Chung** <i>*Inje University, Korea, **Donggeui University, Korea, *****Korea Institute of Science and Technology Information, Korea</i>		
3D-03	Performance Analysis of Broadband Power Line Communications with OFDM Transmission		
185	Chirawat Kotchasarn <i>Rajamangala University of Technology Thanyaburi, THAILAND</i>		
3D-04	Distributed Real-Time Stochastic Optimization based ESS Management Strategy for residential customers		
188	Jeong Sik Kim *, Hyeon Yang*, Seong Gon Choi * <i>ChungBuk National University, Korea</i>		

Day 2 : February 20 (Monday)

Time 14:30~16:00

Session 3E : Web Service & Future Web 1		Room: Phoenix 1
Chair : Dr. Sani Muhamad Isa, Bina Nusantara University, Indonesia		
3E-01 055	Photo Alive! Application and Method for Intergenerational Social Communication Masooma Zehra SYEDA**, Yong-Moo KWON**, <i>*KIST(Korea Institute of Science and Technology), Korea, **UST(University of Science and Technology), Korea</i>	
3E-02 074	Classification of Service Co-creation Systems: an Integrative Approach Reihaneh Bidar*, Jason Watson*, Alistair Barros* <i>*Queensland University of technology, Australia</i>	
3E-03 128	Open Government Data Assessment Model: An indicator development in Thailand Chatipot Srimuang, Nagul Cooharojananone, Uthai Tanlamai, Achara Chandrachai <i>Chulalongkorn University, Thailand</i>	
3E-04 203	Evaluation of Wavelet Fusion Method On Land Cover Classification In Bodetabek Area, Indonesia Sani M. Isa*, Suharjito* <i>*Bina Nusantara University, Indonesia</i>	
3E-05 261	Design of Educational Big Data Application using Spark Min-Seon Lee, Earl Kim, Choon-Sung Nam, Dong-Ryeol Shin <i>Sungkyunkwan University, Korea</i>	

Day 3 : February 21 (Tuesday)

Time 10:00~11:30

Session 4A : Mobile & Wireless Communication 4		Room:	Ruby
Chair : Mr. Sunghyun Kim, ETRI, Korea(South)			
4A-01	IA-Based Hybrid Beamforming Design in MIMO Interference Channel		
045	Ji-Ho Lee*, Myeong-Jin Kim**, and Young-Chai Ko* <i>*Korea University, Korea, **LG Electronics, Korea</i>		
4A-02	Performance Evaluation of DVB-S2X Satellite Transmission according to Sharp Roll off Factors		
046	JongKeun Lee*, **, Daelg Chang** <i>*Korea University of Science & Technology (UST), Korea, **Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
4A-03	Adaptive Polynomials Method for FBMC Nonlinear Power Amplifier Complex Gain		
069	Ditthawat Songrathaset* and Suwat Pattaramalai* <i>King Mongkut's University of Technology Thonburi, Thailand</i>		
4A-04	RFID Indoor Localization System for Tag and Tag-free Target based on Interference		
088	Meng Liu*, Hongjun Wang*, Yang Yang*, Yajun Zhang*, Ligong Li**, Jianhua Xu**, Yao Du**, Liang Ma*, Na Wang** <i>*Shandong University, China, **The 41st Institute of China Electronics Technology Group Corporation, China</i>		
4A-05	A Cooperative Spectrum Sensing Algorithm Based on Leading Eigenvector Matching		
180	Yuhui SONG, Yigang ZHOU <i>Harbin Institute of Technology, China</i>		

Day 3 : February 21 (Tuesday)

Time 10:00~11:30

Session 4B : ITS & Telematics 1		Room:	Emerald
Chair : Prof. Sun-Moo Kang, Kyunghee University, Korea(South)			
4B-01	Standards Analysis on Korean Positioning System for Public Safety		
028	Jaehyuk Choi, Myungin Ji, Jooyoung Kim, Youngsu Cho <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
4B-02	A New Model for Effective Use of Robustness as a Measure of QoS in Vehicular Ad-hoc Networks		
031	Nitin Singh Rajput*, Rahul Banerjee*, Ajinkya Rajput**, Abhimanyu Siwach* <i>*Birla Institute of Technology and Science, India, **Indian Institute of Science, India</i>		
4B-03	Reliable Estimation of Disparity Map in Textureless Region of Roadway		
151	Jai-Eun Kim, Ki-Doo Kim, and Kyeong-Hoon Jung <i>Kookmin University, Korea</i>		
4B-04	A Q-learning algorithm applied to the behavioral decision-making of affective virtual human		
189	Yiwei ZHANG, Tianhuang CHEN <i>Wuhan University of Technology, China</i>		

Day 3 : February 21 (Tuesday)

Time 10:00~11:30

Session 4C : Information & Network Security 4		Room: Diamond 1
Chair : Prof. Rosilah Hassan, Universiti Kebangsaan Malaysia, Malaysia		
4C-01	Testing of Utilities for Finding Vulnerabilities in the Machine Code of Telecommunication Devices	
038	Mikhail Buinevich*, Konstantin Izrailov*, Andrei Vladyko* <i>*The Bonch-Bruевич Saint-Petersburg State University of Telecommunications, Russia</i>	
4C-02	Inferring OpenFlow Rules by Active Probing in Software-defined Networks	
063	Po-Ching Lin, Ping-Chung Li, Van Linh Nguyen <i>National Chung Cheng University, Taiwan</i>	
4C-03	Self Configuring Netflow Anomaly Detection using Cluster Density Analysis	
106	Kieran Flanagan*, ***, Enda Fallon*, Abir Awad**, Paul Connolly*** <i>*Athlone Institute of Technology, Ireland, University of South Wales, UK, *****The NPD Group, Inc, Ireland</i>	
4C-04	Re-identification of medical records by optimum quasi-identifiers	
168	Yong Ju LEE*, Kyung Ho LEE* <i>*Korea University, Korea</i>	
4C-05	Security Attacks on Information Centric Networking for Healthcare System	
273	B Balaji Naik*, Dhananjay Singh**, A. B. Samaddar*, Hoon-Jae Lee*** <i>*National Institute of Technology (NIT), India, **Hankuk University of Foreign Studies (HUFS), Korea, ***Dongseo University (DSU), Korea</i>	

Day 3 : February 21 (Tuesday)

Time 10:00~11:30

Session 4D : Big Data & Search Engine 1		Room: Diamond 2
Chair : Prof. Kwanghoon Kim, Kyonggi University, Korea(South)		
4D-01	Heterogeneous Reconfigurable Design for TreePM N-body Simulation	
018	Linlin Zheng*, Xi Jin*, Bo Peng*, Tianqi Wang* <i>University of Science and Technology of China, China</i>	
4D-02	Gateway-based Access Interface Management in Big Data Platform	
032	Minh Chau Nguyen*, Hee Sun Won* <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
4D-03	Scene Boundary Detection with Graph embedding	
039	Jeong-Woo Son, Wonjoo Park, Minho Han, Sun-Joong Kim <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
4D-04	Comparison of Flavivirus Using Datamining-Apriori, K-means, and Decision Tree Algorithm	
182	Chan woo Kim, and Se Hwan Ahn, and Taeseon Yoon <i>HAFS (Hankuk Academy of Foreign Studies), Korea</i>	
4D-05	String Vector based KNN for Text Categorization	
195	Taeho Jo <i>Hongik University, Korea</i>	

Day 3 : February 21 (Tuesday)

Time 10:00~11:30

Session 4E : Web Service & Future Web 2		Room: Phoenix 1
Chair : Dr. Mangal Sain, Dongseo University, Korea(South)		
4E-01 040	Managing IoT Devices using Blockchain Platform Seyoung Huh*, Sangrae Cho*, Soohyung Kim* <i>*Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
4E-02 084	Framework of Emotion for the Singularity in a Social Context Toshihiko Yamakami <i>ACCESS, Japan</i>	
4E-03 375	Determination of the Optimum Feature Extraction Technique Using Wavelet in Classification Phase of Growing Rice Muhamad Irsyad Habibi*, Sani M. Isa*, Sidik Mulyono** <i>*Bina Nusantara University, Indonesia, **Agency for The Assessment and Application of Technology (BPPT), Indonesia</i>	
4E-04 387	Protecting Individuals from the Suitable Target of Cyberbullying Benjamapom Kluaypa, Da-Yu Kao <i>Central Police University, Taiwan, ROC</i>	
4E-05 390	Analyzing stock price changes using event related Twitter feeds Satyabrata Aich*, Hee-Cheol Kim*, Mangal Sain**, Bijay Bhaskar Deo*** <i>*Inje University, Korea, **Dongseo University, Korea, ***Syracuse University, USA</i>	

Day 3 : February 21 (Tuesday)

Time 13:00~14:30

Session 5A : Mobile & Wireless Communication 5		Room:	Ruby
Chair : Prof. Woo-Yong Choi, Dong-A University, Korea(South)			
5A-01	Distant Auscultation System for Detecting Lung Sounds of Patients on Ambulances		
121	Bing-Yuh Lu*, Ming-Kwen Tsai*, Jhen-Chen Wang*, Meng-Lun Hsueh **, Huey-Dong Wu***, Jin-Shin Lai***, Ya-Fen Wu****, Tzer-En Nee***** *Tungnan University, Taiwan, **Hwa Hwa Hsia University of Technology, Taiwan, *****National Taiwan University Hospital, Taiwan, ****Ming Chi University of Technology, Taiwan, *****Chang Gung University, Taiwan		
5A-02	Design of Two-stage Fully-integrated CMOS Power Amplifier for K-band Applications		
122	Hyunjun Kim, Jongseok Bae, Sungjae Oh, Wonseob Lim, and Youngoo Yang Sungkyunkwan University, Korea		
5A-03	Random-Permutation-Matrix-Based Cyclically-Coupled LDPC Codes		
130	Francis C. M. Lau*†, Fanlu Mo*, Wai M. Tam* and Chiu-Wing Sham* *Hong Kong Polytechnic University, Hong Kong, †Hong Kong Polytechnic University Shenzhen Research Institute, China		
5A-04	A Stable Clustering Algorithm based on Affinity Propagation for VANETs		
136	Hamayoun Shahwani , Toan Duc Bui , Jaehoon (Paul) Jeongy and Jitae Shin Sungkyunkwan University, Korea		
5A-05	LDPC convolutional codes Coded cooperation based on Puncturing		
142	Wenhe JIN, Shaohua WU, Erpeng YANG, Jian JIAO Harbin Institute of Technology, China		

Day 3 : February 21 (Tuesday)

Time 13:00~14:30

Session 5B : ITS & Telematics 2		Room:	Emerald
Chair : Dr. Jihyun Lee, ETRI, Korea(South)			
5B-01	Service Function Path Adaptation in SFC		
053	*Seungik Lee, **Sangheon Pack, *Myung-Ki Shin *Electronics and Telecommunication Research Institute (ETRI), Korea, **Korea University, Korea		
5B-02	A Collision-Mitigation Hashing Scheme Utilizing Empty Slots of Cuckoo Hash Table		
153	ChoongHee Cho*, JungBok Lee**, and Jeong-dong Ryoo* *Korea University of Science and Technology (UST), Korea, **Kakao Corp, Korea		
5B-03	A Design and Simulation of Variable CCH Interval based on Message of V2X		
252	ShinKyung Lee, HyunKyun Choi Electronics and Telecommunication Research Institute (ETRI), Korea		
5B-04	A Study for QoS support in the WAVE MAC		
336	Jeong-Woo Lee, Hyun-Kyun Choi Electronics and Telecommunication Research Institute (ETRI), Korea		

Day 3 : February 21 (Tuesday)

Time 13:00~14:30

Session 5C : Application & Biometric Security		Room: Diamond 1
Chair : Dr. Jungju Yoo, ETRI, Korea(South)		
5C-01	Intensified Analysis and Comparison of 5 Flavivirus with the use of Decision Tree and Support Vector Machine (SVM)	
183	Eujin Yang, and Bokyoung Gu, and Taeseon Yoon <i>HAFS (Hankuk Academy of Foreign Studies), Korea</i>	
5C-02	Computational Analysis of Chloroplast DNA and Synechococcus by Apriori and Decision Tree	
190	Kyuhee Jo, Hyemin Lee, Taeseon Yoon <i>HAFS (Hankuk Academy of Foreign Studies), Korea</i>	
5C-03	Forensic Tool for Wireless Surveillance Camera	
212	Reem Alshalawi, Turki Alghamdi <i>Umm Al-Qura University, Saudi Arabia</i>	
5C-04	Energy Efficient Middleware: Design and Development for Mobile Applications	
294	Fatimah Abdualaziz Almusalli*, Noor Zaman*, Raihan Rasool** <i>*King Faisal University, Saudi Arabia, Victoria University Melbourne, Australia</i>	
5C-05	Security Analysis of Samsung Knox	
405	Munkhzorig Dorjmyagmar, MinChang Kim, Hyoungshick Kim <i>Sungkyunkwan University, Korea</i>	

Day 3 : February 21 (Tuesday)

Time 13:00~14:30

Session 5D : Big Data & Search Engine 2		Room: Diamond 2
Chair : Dr. Hyung-soon Kim, NIA, Korea(South)		
5D-01	Accelerating Eulerian Video Magnification Using FPGA	
021	Kening Zhang*, Xi Jin*, An Wu* <i>University of Science and Technology of China, China</i>	
5D-02	Design of Scene Knowledge base system based on Domain ontology	
090	Wonjoo PARK*, Minho Han*, Jeong-Woo Son*, Sun-Joong Kim* <i>*ETRI(Electronics and Telecommunications Research Institute), Korea, **Chung-Ang University, Korea</i>	
5D-03	Segmentation of Group-Housed Pigs using Concave-Points and Edge Information	
152	*Hansol Baek, *Yeonwoo Chung, *Miso Ju, *Yongwha Chung, and *Daihee Park <i>*Korea University, Korea</i>	
5D-04	Implementation of Robot Journalism by Programming Custombot using Tokenization and Custom Tagging	
161	Naeun Lee, and Kirak Kim, Taeseon Yoon <i>HAFS (Hankuk Academy of Foreign Studies), Korea</i>	
5D-05	Analysis on Mannose-binding Lectin as a Treatment of Helicobacter pylori by Using Data Mining	
172	Seojun Kim, Wonjong Lee, Juho Jung, and Taeseon Yoon <i>HAFS (Hankuk Academy of Foreign Studies), Korea</i>	

Day 3 : February 21 (Tuesday)

Time 13:00~14:30

Session 5E : Web Service & Future Web 3		Room: Phoenix 1
Chair : Dr. Seong-Soon Joo, ETRI, Korea(South)		
5E-01 042	IDMP-VLC: IoT Device Management Protocol in Visible Light Communication Networks Cheol-Min Kim, Sang-Il Choi, Seok-Joo Koh <i>Kyungpook National University, Korea</i>	
5E-02 044	Cluster-based CoAP for Message Queuing in Internet-of-Things Networks Dong-Kyu Choi, Joong-Hwa Jung, Hyung-Woo Kang, Seok-Joo Koh <i>Kyungpook National University, Korea</i>	
5E-03 054	IOT base Smart Home Appliances by using Cloud Intelligent Tetris Switch Ming-Shen Jian, Jun-Yi Wu, Jing-Yan Chen, Yue-Jyun Li, Yi-Cheng Wang, Hao-Yi Xu <i>National Formosa University, Taiwan</i>	
5E-04 132	Proposed Classification of Blockchains Based on Authority and Incentive Dimensions Hitoshi Okada*, Shigeichiro Yamasaki**, Vanessa Bracamonte* <i>*National Institute of Informatics, Japan, **Kindai University, Japan</i>	
5E-05 147	Detection and Recognition of Hand Gesture for Wearable Applications in IoMTW Anna YANG*, Sung Moon CHUN**, Jae-Gon KIM* <i>*Korea Aerospace University, Korea, **Insignal, Korea</i>	

Day 3 : February 21 (Tuesday)

Time 15:00~16:30

Session 6A : Mobile & Wireless Communication 6		Room:	Ruby
Chair : Dr. Hyeong Ho Lee, ETRI, Korea(South)			
6A-01	Design of Downlink Control Channels for MHN Enhanced System		
051	Dae-Soon Cho†, Ilgyu Kim† † <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
6A-02	Generalized Stable Marriage-Assisted Power and Sub-band Allocation for Energy Efficient OFDMA-based Uplink		
150	Xiaoxiao Chen*, Peng Gong*, Haiqiao Wu*, Xiang Gao*, Duk Kyung Kim** * <i>Beijing Institute of Technology, China</i> , ** <i>Inha University, Korea</i>		
6A-03	A Programmable Interactive Approach for QualNet-based Network Model Evaluation and Testing		
156	Haiqiao Wu**, Lining Han**, Li Huang*, Meng Song**, Duk Kyung Kim***, and Peng Gong** * <i>State Grid Global Energy Interconnection Research Institute, China</i> , ** <i>Beijing Institute of Technology, China</i> , *** <i>Inha University, Korea</i>		
6A-04	Lens MIMO Based Millimeter Wave Broadcast Channel		
159	Kushal Anand, Erry Gunawan, Yong Liang Guan <i>Nanyang Technological University, Singapore</i>		
6A-05	AIM - Adaptive Invalidation Mechanism for Wireless Networks		
378	Mangal Sain*, Srikanth Varanasi**, Young-Jin Kang*, Hoon Jae Lee* * <i>Dongseo University, Korea</i> , ** <i>Texas Tech University, LUSA</i>		
6A-06	Performance of PLC Synchronization for DOCSIS 3.1 Receiver		
015	Jaeho LEE*, Younok PARK*, Seungchan BANG* <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>		

Day 3 : February 21 (Tuesday)

Time 15:00~16:30

Session 6B : Software Platform & Smart Service 1		Room:	Emerald
Chair : Dr. Jungju Yoo, ETRI, Korea(South)			
6B-01	Cost-efficient 3D Face Reconstruction from a Single 2D Image		
011	Juseung Yun*, Jaeyoung Lee*, Dongyoon Han*, Jeongwoo Ju*, Junmo Kim* <i>KAIST (Korea Advanced Institute of Science and Technology), Korea</i>		
6B-02	A Bayesian Sensor Fusion Scheme for Attitude Tracking		
023	Junekey Jeon, Hwa-Suk Kim, Woo-Sug Jung, Sun-Joong Kim <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
6B-03	Interactive Media Creation by Reusing Video Contents		
024	Minho Han, Wonjoo Park, Jeong-Woo Son, Sun-Joong Kim <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
6B-04	A New ICF-based Ball Tracking System with Multi-Expose Cameras for Virtual Sports		
027	Jong-Sung Kim, Myung-Gyu Kim <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
6B-05	A 4-stage Mental Model of Conversion: An Approach to Capture Transition of Customer Mind		
082	Toshihiko Yamakami <i>ACCESS, Japan</i>		
6B-06	Design of Interfaces among Functionalities for Smart Greenhouse		
160	MiYoung Huh*, JuYoung Park* <i>ETRI(Electronics and Telecommunications Research Institute), Korea</i>		

Day 3 : February 21 (Tuesday)

Time 15:00~16:30

Session 6C : Systems & Software Engineering 1		Room: Diamond 1
Chair : Prof. Bing-Yuh Lu, Tunghan University, Taiwan		
6C-01	Implementations of automated testing environment for distributed multimedia streaming applications	
034	Wook Hyun*, Ju Young Park* <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
6C-02	Common Hardware Reference Platform for Smart Networks : Management of NFB	
050	Jihyun Lee*, Myung-Ki Shin*, Sungil Lim**, Sung-Hyuk Park*** <i>*ETRI(Electronics and Telecommunications Research Institute), Korea, **ubiQuoss. Inc., Korea, ***WOORINET, Seoul, Korea</i>	
6C-03	Various Green Energy Sources in Smart Grid Power Network based on Cloud	
064	Ming-Shen Jian, Yen-Lung Chen, Rui-Wei Tong, Yu-Huei Lin, Chih Cheng <i>National Formosa University, Taiwan</i>	
6C-04	Sensory Effect Representation for Barrier-free Broadcasting Service	
089	Ji Hoon Choi*, Chung Hyun AHN*, Jeongil Seo*, Ohseok Kwon** <i>*ETRI(Electronics and Telecommunications Research Institute), Korea, **Chungnam National University, Korea</i>	

Day 3 : February 21 (Tuesday)

Time 15:00~16:30

Session 6D : Big Data & Search Engine 3		Room: Diamond 2
Chair : Prof. Yu-ning Dong, Nanjing University of Posts and Telecommunications, China		
6D-01	Fine Grained Classification of Internet Multimedia Traffics	
013	Yu-ning DONG, Kai WANG <i>Nanjing University of Posts and Telecommunications (NUPT), China</i>	
6D-02	String Vector based AHC for Text Clustering	
196	Taeho Jo <i>Hongik University, Korea</i>	
6D-03	Analysis of HSV-1 and HSV-2 that Cause Herpes Simplex with Apriori Algorithm, Decision Tree, and Support Vector Machine	
200	Juhyun Lee, Yeojin Jung, Seungho Shin, and Taeseon Yoon <i>HAFS (Hankuk Academy of Foreign Studies), Korea</i>	
6D-04	Analysis of Relation between Aging and Telomere using Datamining – Apriori, Decision Tree, and Support Vector Machine(SVM)	
288	Jongchan LEE, Taeseon YOON <i>Hankuk Academy of Foreign Studies, Korea</i>	

Day 3 : February 21 (Tuesday)

Time 15:00~16:30

Session 6E : Web Service & Future Web 4		Room: Phoenix 1
Chair : Dr. Ruslan Kirichek, State University of Telecommunications, Russian Federation		
6E-01	A 3-dimensional View Model of IoT-empowered Business Model Engineering Towards Borderless Business Reengineering	
085	Toshihiko Yamakami <i>ACCESS, Japan</i>	
6E-02	Scheme to Guarantee IP Continuity for NFC-based IoT Networking	
133	Younghwan Choio, Yunchul Choi, Dongmyoung Kim, Jungsoo Park <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
6E-03	Survey on Security in Internet of things: state of the art and challenges	
345	Mangal Sain, Young Jin Kang, Hoon Jae Lee <i>Dongseo University, Busan, Korea</i>	
6E-04	A Reliable Internet of Things based Architecture for Oil and Gas Industry	
399	Wazir Zada Khan*, Mohammed Y Aalsalem*, Muhammad Khurram Khan**, Md. Shohrab Hossain*** and Mohammed Atiquzzaman**** <i>*Jazan University, Saudi Arabia, **King Saud University, Saudi Arabia, ***Bangladesh University of Engineering and Technology, Bangladesh, ****University of Oklahoma, USA</i>	

Day 3 : February 21 (Tuesday)

Time 17:00~18:30

Session 7A : Mobile & Wireless Communication 7		Room:	Ruby
Chair : Prof. Francis C.M. LAU, HKPolyU, Hong Kong			
7A-01 170	Measurement and Analysis for 3.5GHz Small-cell Environment with Time and Spatial Ratio Jinhyung Oh, Byungjin Lee**, Kyungseok Kim** and Young Jun Chong <i>*Electronics and Telecommunication Research Institute (ETRI), Korea, **Chungbuk National University, Korea</i>		
7A-02 174	An Improved Spectrum Sensing Algorithm Based on Random Matrix Theory Yuhui SONG, Yigang ZHOU <i>Harbin Institute of Technology, China</i>		
7A-03 187	An Industrial IoT MAC Protocol Based on IEEE 802.15.4e TSCH for A Large-Scale Network Kyeong Tae Kim*, Haeyong Kim*, Huing Park**, Seon-Tae Kim* <i>*Electronics and Telecommunication Research Institute (ETRI), Korea, **University of Science & Technology, Korea</i>		
7A-04 309	ELF Wave Propagation Simulation using FDTD Method and Satellite Constellation Concept for Early Warning System Rahmi Rahmatillah <i>Kyushu Institute of Technology, Japan</i>		
7A-05 324	Improving Latency Using Codes in Mission-Critical Communication Sunghyun Kim* and Jee-Hyeon Na* <i>*Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
7A-06 360	An Area-Efficient Multimode FFT Circuit for IEEE 802.11 ax WLAN Devices Phuong T.K. Dinh**, Leonardo Lanante*, Minh D. Nguyen**, Masayuki Kurosaki* and Hiroshi Ochi* <i>*Kyushu Institute of Technology, Fukuoka, Japan, **Hanoi University of Science and Technology, Vietnam</i>		

Day 3 : February 21 (Tuesday)

Time 17:00~18:30

Session 7B : Software Platform & Smart Service 2		Room:	Emerald
Chair : Dr. Ruslan Kirichek, State University of Telecommunications, Russian Federation			
7B-01 049	Augmented ontology by handshaking with machine learning Marie Kim, Hyunjoong Kang, Soonhyun Kwon, YongJoon Lee, Kwihoon Kim, Cheol Sik Pyo <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
7B-02 068	An Open Interactive Survey Platform to Collect and Analyze Users' Privacy Decisions in Pervasive Computing Environments Seung-Hyun Kim*†, In-Young Ko*, Soo-Hyung Kim† <i>* Computer Science, KAIST, Korea, *Electronics and Telecommunication Research Institute (ETRI), Korea</i>		
7B-03 079	To Reduce Signaling Cost for Smart Grid Alarm System by Using Caching Mechanism Jeong Sik Kim*, Soon Ki Eun**, Seong Gon Choi* <i>*Chungbuk National University, Korea</i>		
7B-04 083	A Comparative Analysis of Time-lag Type-in Advertisements Toshihiko Yamakami*, Aska Ikeda**, Tetsuro Fujii** <i>*ACCESS, Japan, *** Tokyo City University, Japan</i>		
7B-05 111	Multi-Object Tracker Using Kernelized Correlation Filter Based on Appearance and Motion Model Kwang-Yong Kim*, Jun-Seok Kwon**, Kee-Seong Cho* <i>*ETRI(Electronics and Telecommunications Research Institute), Korea, **Chung-Ang University, Korea</i>		

Day 3 : February 21 (Tuesday)

Time 17:00~18:30

Session 7C : Systems & Software Engineering 2		Room: Diamond 1
Chair : Dr. Sani Muhamad Isa, Bina Nusantara University, Indonesia		
7C-01	Fault Detection and Fault Tolerant System for Smart Factories	
057	*†Prajakta Jadhav, *†In-Geol Chun	
	<i>*Korea University of Science and Technology (UST), Korea, †Electronics and Telecommunications Research Institute (ETRI), Korea</i>	
7C-02	Auto Calibration for Arrayed Penetrating Radar	
073	Dong Kyoo Kim, Youngwoo Choi	
	<i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
7C-03	LevelDB-Raw: Eliminating File System Overhead for Optimizing Performance of LevelDB Engine	
097	Hak-Su Lim and Jin-Soo Kim	
	<i>Sungkyunkwan University, Korea</i>	
7C-04	Economic Feasibility Analysis of PV Installation for a CES Apartment Complex	
145	Soyoung PARK*, Wan-Ki PARK*, Il-Woo LEE*	
	<i>ETRI (Electronics and Telecommunications Research Institute), Korea</i>	
7C-05	Server for SQLite Database: Multithreaded HTTP Server with Synchronized Database Access and JSON Data-Interchange	
393	Noprianto, Benfano Soewito, Sani Muhamad Isa, Karto Iskandar, Ford Lumban Gaol, Raymond Kosala	
	<i>Bina Nusantara University, Indonesia</i>	

Day 3 : February 21 (Tuesday)

Time 17:00~18:30

Session 7D : Big Data & Search Engine 4		Room: Diamond 2
Chair : Dr. Taeho Jo, Hongik University, Korea(South)		
7D-01	Big Data Analysis in Hotel Customer Response and Evaluation based on Cloud	
041	Ming-Shen Jian, Yi-Chi Fang, Yu-Kai Wang, Chih Cheng	
	<i>National Formosa University, Taiwan</i>	
7D-02	ROUTE/DASH Server system development for Real-time UHD broadcasting	
178	Myungseok Ki, Jinwuk Seok, Hui Yong Kim	
	<i>ETRI(Electronics and Telecommunications Research Institute), Korea</i>	
7D-03	Constructing a Sorting Machine for Degenerative Cerebroprothia	
194	Seohyun Moon, Bogeum Choi, Jiwoo An, Taeseon Yoon	
	<i>HAFS (Hankuk Academy of Foreign Studies), Korea</i>	
7D-04	Long Text Segmentation by String Vector based KNN	
198	Taeho Jo	
	<i>Hongik University, Korea</i>	

Day 4 : February 22 (Wednesday)

Time 10:00~11:30

Session 8A : Mobile & Wireless Communication 8		Room: Ruby
Chair : Prof. Woo-Yong Choi, Dong-A University, Korea(South)		
8A-01 016	Digital Hopping of Narrowband Waveform using Wideband Frontend Sumbul Gulzar, Shoab A.Khan, Muhammed Zeeshan <i>National University of Sciences and Technology, Pakistan</i>	
8A-02 318	The Implementation of Spectrum Sensing and Spectrum Allocation on Cognitive Radio Pitcha Rungsawang, Amnach Khawne <i>King Mongkut's Institute of Technology Ladkrabang, Thailand</i>	
8A-03 333	Practical Access Control Protocols (PACPs) for Wireless Sensor Networks: Analysis of Security Pitfalls Mangal Sain, Hyun Ho Kim, Hoon Jae Lee <i>Dongseo University, Korea</i>	
8A-04 339	Uplink frame structure of Short TTI system Eunjeong Shin*, Gwendo Jo** <i>*Electronics and Telecommunications Research Institute, Korea, **Second Company, Korea</i>	
8A-05 348	Enhancing Limit MAC Performance for IEEE 802.11 Wireless LANs Woo-Yong Choi <i>Dong-A University, KOREA</i>	
8A-06 381	Design of CMOS Continuous-Time Low-pass Delta-Sigma Modulator for Digital Distributed Antenna System based on IF-over-Fiber Transmission Seunghyun Jang*, Seok-Bong Hyun*, Kwang-Seon Kim*, Jaeho Jung*, Bonghyuk Park* <i>*Electronics and Telecommunication Research Institute (ETRI), Korea</i>	

Day 4 : February 22 (Wednesday)

Time 10:00~11:30

Session 8B : Software Platform & Smart Service 3		Room: Emerald
Chair : Prof. Byeongnam Yoon, Kyonggi University, Korea(South)		
8B-01 116	Modeling of manufacturing software catalogue for interoperability in manufacturing systems Sangkeun YOO*, Hyunjeong LEE*, Yong-woon KIM*, Hoon CHOI** <i>*ETRI (Electronics and Telecommunications Research Institute), Korea</i>	
8B-02 163	Altruistic Knowledge Sharing in Online Communities L. G. Pee* <i>*Nanyang Technological University, Singapore</i>	
8B-03 315	Human Gesture Recognition Performance Evaluation for Service Robots Mi-Young Cho, Young-Sook Jeong <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
8B-04 396	Footprint based Workflow Model for Analytical Task Automation Minjae Park*, Jin Ma**, Hyunah Kim***, Hyun Ahn***, Kwnaghoon Pio Kim*** <i>*BISTel, Inc., Korea, **KISTI, Korea, ***Kyonggi University, Korea</i>	
8B-05 139	Design of Large Scale Network Simulator using Device Emulator for Internet of Things Bumho Kim, Haeyong Kim, Seon-Tae Kim <i>ETRI (Electronics and Telecommunications Research Institute), Korea</i>	

Day 4 : February 22 (Wednesday)

Time 10:00~11:30

Session 8C : Systems & Software Engineering 3		Room: Diamond 1
Chair : Prof. Kwanghoon Kim, Kyonggi University, Korea(South)		
8C-01 033	Estimating Number of Organs using Erlang's B & C-Formulas James K. Tamgno*, Mamadou Alpha Barry*, Simplicie E. Gngang*, Claude Lishou** <i>*ESMT-DETIC-LTI, Senegal, **LTI Laboratory, Senegal</i>	
8C-02 138	Compressed Sensing Image Reconstruction Based on Joint Statistical and Structural Priors Jiahui LI, Shaohua WU, Huan HUANG, Jian JIAO <i>Harbin Institute of Technology Shenzhen Graduate School, China</i>	
8C-03 144	Performance Comparison of MRTOS and VxWorks in MultiBench Benchmark Suite Jeong-Woo Lee, Sang Cheol Kim, Duk-Kyun Woo, Yu-Seung Ma, Pyeongsoo Mah <i>ETRI (Electronics and Telecommunications Research Institute), Korea</i>	
8C-04 279	Atomic Multi-database Transaction of WAL Journaling Mode in SQLite Sungmin Kim, Minseok Kim, Dam Quang Tuan, Youjip Won <i>Hanyang University, Korea</i>	

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Session 8D : Big Data & Search Engine 5		Room: Diamond 2
Chair : Dr. Minjae Park, BISTel, Inc., Korea(South)		
8D-01 078	Bulb Control in Virtual Reality by Using Leap Motion Somatosensory Controlled Switches Bing-Yuh Lu*, Chin-Yuan Lin*, Shu-Kuang Chang*, Yi-Yen Lin*, Chun-Hsiang Huang*, Hai-Wu Lee**, Ying-Pyng Lin* <i>*Tungnan University, Taiwan, **National Taipei University of Technology, Taiwan</i>	
8D-02 246	A Comparative Study on Multi-object Tracking Methods for Sports Events Sungwon MOON*, Jiwon LEE*, Dowon NAM*, Howon KIM*, Wonjun KIM** <i>*Electronics and Telecommunication Research Institute (ETRI), Korea, **KONKUK University, Korea</i>	
8D-03 249	A Study on Composition of Context-based Soccer Analysis System Jiwon Lee, Do-Won Nam, JungSoo Lee, Sungwon Moon, Kyungill Kim, and Howon Kim <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
8D-04 357	A study on motion recognition of objects in soccer game Jungsoo Lee*, Jiwon Lee*, Sungwon Moon*, Dowon Nam* <i>*Electronics and Telecommunication Research Institute (ETRI), Korea</i>	
8D-05 372	Epidemiological Analysis of MERS-CoV Using NN and SVM in Respect to Applicability of AI in Multiple Classes Soyoung Hong, Sungwoo Choi, Donghyun Kim, and Taeseon Yoon <i>Hankuk Academy of Foreign Studies, Korea</i>	

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● Floor Plan (Hotel)



3F

- 1. Topaz
- 2. Opal



2F

- 1. Phoenix ballroom
- 2. Diamond
- 3. Emerald
- 4. Ruby
- 5. Business center

1. VOLTAGE

In Korea, 220 Volt and 60 Herz outlets with Type C or Type F are most commonly used now.



2. WEATHER

Korea has four distinct seasons - spring, summer, fall and winter. Skiing season starts from late November and lasts to early March. Especially the inland area of Gangwon province is most snowy, windy and coldest in winter season. Therefore you must prepare and wear the winter clothes for the cold weather. For your correct weather information, please refer to the following URL of Korea Weather Forecasting Authority..

<http://web.kma.go.kr/eng/>

3. 1330 KOREA TRAVEL PHONE

For English assistance or travel Information, just dial 1330, and a bilingual operator will offer you detailed tourism information.

http://english.visitkorea.or.kr/enu/GK/GK_EN_2_7_1_1.jsp

4. Other Useful Information about Korea

Please refer to the following URL of Incheon International Airport, Korea Tourism Organization etc.

<http://www.airport.kr/pa/en/a/index.jsp> (Incheon International/domestic Airport)

<http://www.airport.co.kr/wwweng/main.do>(Gimpo International/domestic Airport)

<http://asiaenglish.visitkorea.or.kr/ena/index.kto> (Korea Tourism Organization)

<http://eng.gwd.go.kr/> (Information about Gangwon-Do)

<http://en.happy700.or.kr/index.happy> (Information about PyeongChang area)



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