### Program for 2014 IEEE International Conference on Consumer Electronics (ICCE)

**Friday, January 10**

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<td>Break, P01: Poster Session 1: Image/Video Technologies and A/V systems,</td>
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<tr>
<td>17:00</td>
<td>Welcome Reception</td>
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<td><strong>Saturday, January 11</strong></td>
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<td>08:30</td>
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<td>09:00</td>
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<td>16:20</td>
<td>Break, P02: Poster Session 2: Enabling Technology and Automotive</td>
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<td>Entertainment, Safety &amp; Information</td>
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09:00

**Keynote:** Beyond Megapixels: The Future of Computational Imaging in Mobile Devices

Kartik Venkataraman (Pelican Imaging CTO)

10:00

**Workshop:** Doctoral Workshop (Carsten Gremzow)

11:20 **Break**

11:40

**TUT05:** TUTORIAL: High-Speed Transceiver Performance of FPGAs in Next-Gen Mobility Applications (John Jones)

13:20

**Awards Ceremony and Discussion Panel: Best of CES**

14:40

**TUT06:** TUTORIAL: Nonintrusive Appliance Load Monitoring - Opportunities and Challenges (Michael Zeifman)

16:20 **Break**

P03: Poster Session 3: Entertainment & Services Technology, RF Wireless & Network Technologies

17:00

**Conference Party (free, ticket required): The Art of Gaming with food and drink**

**Monday, January 13**

08:30

**Breakfast Keynote:** Next Generation Mobility - Is Standardization a Help or a Hindrance?.

Stephen Kirk (UL WiSE)

09:00

**Break Breakfast**
Friday, January 10

08:30 - 09:00

Breakfast

Room: N257/259/261

09:00 - 10:20

Opening and Keynote: Gary Shapiro (CEA), Gildas Sorin (Novaled) and Hon. Oscar Goodman, Las Vegas Mayor Emeritus

Room: N257/259/261

Gildas Sorin: The OLED ascent

The tremendous success of the Samsung galaxy family of portable devices has sustained the emergency of the OLED displays. The OLED technology allows the arrival of the next generation of displays who become flexible and in a next step should be expected similar to a sheet of paper. Beside Samsung Display all the major display makers are preparing their OLED display roadmap. At the difference of the Plasma display using a disruptive technology to LCD the OLED display has to be seen as an evolution of the LCD technology.

The current difficulties to master the mass production of the large OLEDTV screens should not conceal the fundamental move of the display industry towards OLED. The talk will present the reasons to be optimistic for the OLED growth but without neglecting the challenges to resolve.

10:20 - 11:40

1-1: Invited Session: Future Directions: Smart Grid, Transportation, Green ICT, Life Sciences

Room: N258

D. A. Grier Introduction, setting the theme of convergence
S. Collier Smart Grid
J. Taiber Transportation Electrification
C. Despins Green ICT

1-2: Sensor Based Consumer Applications
10:20 **Coordinate Alignment Using Acceleration Data From a Smartphone to Interact with a Digital TV**
Sang-Young Park (Samsung Electronics Co., Ltd., Korea); Byungchul Kim (Samsung Electronics Co., Ltd., Korea); Kilsoo Jung (Samsung Electronics Co., Ltd., Korea)

10:40 **Automatic Piano Tutoring System Using Consumer-Level Depth Camera**
Seungmin Rho (Kookmin University, Korea); Jae-In Hwang (Korea Institute of Science and Technology, Korea); Junho Kim (Kookmin University, Korea)

11:00 **An Indoor Positioning System Using Disturbances of the Geomagnetic Field in Buildings**
Seong-Eun Kim (Samsung Electronics, Korea); Eungsun Kim (Samsung Advanced Institute of Technology, Korea); HyunSu Hong (Samsung Electronics, Korea)

11:20 **ScrapBook: An Interactive Workspace Using Digital and Physical Contents**
Sungyong Shin (Electronics and Telecommunications Research, Korea); Dong-Woo Lee (ETRI, Korea); Gi-Su Heo (ETRI, Korea); Kyoungh-Ju Noh (ETRI, Korea); Hyun-Tae Jeong (ETRI, Korea)

1-3: Processing in HEVC

Room: N262

10:20 **Fast Coding Unit Partitioning Algorithm for HEVC**
Xiaotao Hou (Tsinghua University, P.R. China); Yonglin Xue (Tsinghua University, P.R. China)

10:40 **Edge-Based Fast Mode Decision Algorithm for Intra Prediction in HEVC**
Sangkwon Na (Samsung Electronics, Korea); Wonjae Lee (Samsung Electronics, Korea); Kiwon Yoo (Samsung Electronics, Korea)

11:00 **Fast Inter Sub-Partition Prediction Unit Mode Decision for HEVC**
Seungha Yang (Sungkyunkwan University, Korea); Hiuk Jae Shim (Sungkyunkwan University, Korea); Kwanghyun Won (Sungkyunkwan University, Korea); Byeungwoo Jeon (Sungkyunkwan University, Korea)

11:20 **SSIM Based Rate-Distortion Optimization for Intra-Only Coding in HEVC**
Feng Cen (Tongji University, P.R. China); Qianli LU (Tongji University, Shanghai, P.R. China); Weisheng Xu (Tongji University, P.R. China)

1-4: Interactive Mobile Devices: Applications & Control

Room: N264

10:20 **Reducing Excessive Journaling Overhead in Mobile Devices with Small-Sized NVRAM**
Junghoon Kim (Sungkyunkwan University, Korea); Changwoo Min (Sungkyunkwan University, Korea); Young Ik Eom (Sungkyunkwan University, Korea)

10:40 **RIK: A Virtual Keyboard Resilient to Spyware in Smartphones**
Sarang Na (Yonsei University, Korea); Taekyoung Kwon (Yonsei University, Korea)

11:00 **SwitchPIN: Securing Smartphone PIN Entry with Switchable Keypads**
Taekyoung Kwon (Yonsei University, Korea); Sarang Na (Yonsei University, Korea)

11:20 **Efficient Memory Deduplication for Mobile Smart Devices**
Sung-hun Kim (Sungkyunkwan University, Korea); Jinkyu Jeong (Sungkyunkwan University, Korea); Joonwon Lee (SungKyunKwan University, Korea)

11:40 - 12:00

Break

Room: Hall Area

12:00 - 13:20

1-5: Invited Session: Future Directions II: Smart Grid, Transportation, Green ICT, Life Sciences

Room: N258

Atam Dhawan Life Sciences
Panel Session

1-6: OFDM-Applications I
12:00 **Influences of Inaccurate Estimation of Noise Variance in Sum-Product Algorithm for DVB-T2 Receiver**
Shingchern D You (National Taipei University of Technology, Taiwan); Shun-Jie Huang (National Taipei University of Technology, Taiwan)

12:20 **A Recursive Optimum Frequency Domain Matrix to Reduce Crest Factor in OFDM Systems**
Pooria Varahram (UPM, Malaysia); Borhan Ali (ITMA-UPM, Malaysia); Somayeh Mohammady (University Putra Malaysia, Malaysia); Nasri Sulaiman (Universiti Putra Malaysia, Malaysia)

12:40 **Analysis of TV White Spaces in Dynamic Broadcast Taking Into Account Adjacent Channel Interference**
Piotr Palka (Technical University of Braunschweig, Germany)

13:00 **FFT-based Equalizer with Doppler Compensation for OFDM Systems in Time-Variant Multipath Channels**
Nasimi Eldarov (Saarland University & Max-Planck Institute for Informatics, Germany); Thorsten Herfet (Saarland University & Intel Visual Computing Institute, Germany)

**1-7: Camera Technologies**<"go to top">

Room: N262

12:00 **Image Matching in Bayer RAW Domain to Remove Ghosting in Multi-Exposure Image Fusion**
Ilya Romanenko (Loughborough University & Apical Ltd, United Kingdom); Alexis L Lluis-Gomez (Loughborough University & Apical Limited, United Kingdom); Eran Edirisinghe (Loughborough University, United Kingdom)

12:20 **Computationally Efficient Vanishing Point Detection for Camera Applications**
Nasser Kehtarnavaz (University of Texas at Dallas, USA); Chih-Hsiang Chang (University of Texas at Dallas, USA)

12:40 **A Novel Colour Management System for Image Signal Processors in Commercial Digital Cameras**
Alexis L Lluis-Gomez (Loughborough University & Apical Limited, United Kingdom); Eran Edirisinghe (Loughborough University, United Kingdom)

13:00 **An Implementation of Closed-loop Optical Image Stabilization System for Mobile Camera**
Seung-Kwon Lee (Dongwoon Anatech, Korea); Jin Heung Kong (Kwangwoon University, Korea)

**1-8: Automotive**<"go to top">

Room: N264

12:00 **Interactive Features Based Augmented Reality Authoring Tool**
Jinwook Shim (Yonsei University & Media System Lab., Korea)

12:20 **Detecting Moving Objects From Slowly Moving Viewpoint for Automotive Rear View Camera Systems**
Jinsan Kwon (Korea Electronics Technology Institute, Korea); Dong-Sun Kim (Korea Electronics Technology Institute, Korea)

12:40 **Using Orientation Sensor of Smartphone to Reconstruct Environment Lights in Augmented Reality**
Yeongseok Jung (GSAIM, Chung-Ang University, Korea); Euna Choi (Chung-Ang University, Korea); Hyunki Hong (Chung-Ang University, Korea)

13:00 **Advanced Driver Assistant System Based on Monocular Camera**
Jun-Su Kang (Kyungpook National University, Korea); Jihun Kim (Kyungpook National University, Korea); Minho Lee (Kyungpook National University, Korea)

13:20 - 14:40

Luncheon Keynote: The Technology and the Application: The challenges of targeted development.
David Alan Grier (IEEE Computer Society)<"go to top">

Room: N257/259/261

Title: "The Technology and the Application: The challenges of targeted development"

Abstract
When trying to plan and manage research and development, all organization must address a list of well known problems. Targeted R&D can be expensive. It carries a high risk of failure. It disrupts organizations. Perhaps no problem is more subtle than the problem of mismatching technology and initial application. When a new
technology is matched with an application that is unlikely to be successful, the technology can develop in an awkward way that ultimately slows its progress. This talk reviews four classes of successful software and technology applications, and assesses the prospects of the current and past Future Direction Committee Initiatives in light of those classes.

14:40 - 16:20

1-10: HEVC Encoder and Decoder

Room: N262

14:40 **HEVC Encoder for Super Hi-Vision**
Kazuhisa Iguchi (NHK, Japan); Atsuro Ichigaya (NHK, Japan); Yasuko Sugito (NHK, Japan); Shinichi Sakaida (NHK, Japan); Yoshiaki Shishikui (NHK, Japan); Norimichi Hiwasa (Mitsubishi Electric Corporation, Japan); Hiroharu Sakate (Mitsubishi Electric Corporation, Japan); Nobuaki Motoyama (Mitsubishi Electric Corporation, Japan)

15:00 **HEVC Inter-frame Skip Enhancement At Low Bit Rates**
Ray Garcia (Florida Atlantic University, USA); Hari Kalva (Florida Atlantic University, USA)

15:20 **A DSP HEVC Decoder Implementation Based on OpenHEVC**
Fernando Pescador (Universidad Politécnica de Madrid, Spain); Jesús Caño (Universidad Politécnica de Madrid, Spain); Matias J Garrido (Universidad Politécnica de Madrid, Spain); Eduardo Juarez (Universidad Politécnica de Madrid, Spain); Mickael Raulet (IETR/INSA Rennes, France)

15:40 **On-line Energy Estimation Model of an RVC-CAL HEVC Decoder**
Rong Ren (Universidad Politécnica de Madrid, Spain); Eduardo Juarez (Universidad Politécnica de Madrid, Spain); Cesar Sanz (Universidad Politécnica de Madrid, Spain); Mickaël Raulet (IETR/INSA Rennes, France); Fernando Pescador (Universidad Politécnica de Madrid, Spain)

16:00 **High Performance DMA Controller for Ultra HDTV Video Codecs**
Niraj Nandan (Texas Instruments, India)

1-11: Home Applications

Room: N264

14:40 **Air Gesture Control Using 5-Pixel Light Sensor**
Zoran Zivkovic (NXP Semiconductors, The Netherlands)

15:00 **Player Modeling: Towards Increasing the Consideration of Human Factors in Video Game Design**
Reyes Juarez Ramirez (Universidad Autónoma de Baja California, Mexico)

15:20 **Smart Coffee Vending Machine Using Sensor and Actuator Networks**
Kwangsoo Kim (ETRI, Korea); Dong-Hwan Park (Electronics and Telecommunications Research Institute, Korea); HyoChan Bang (ETRI, Korea); Geonsoo Hong (Teleworks, Korea); Seong-il Jin (Chungnam National University, Korea)

15:40 **Bayesian Network-based Air-conditioning Control Considering of Occupants Requests**
Kazuyuki Kojima (Saitama University, Japan); Takahiro Okumura (Saitama Medical University, Japan)

16:00 **Image Compression IF Technologies for Low Power FPDs**
Haruhiko Okumura (Toshiba Corp. R & D Center, Japan)

1-9: Cloud Applications in Consumer Electronics

Room: N260

14:40 **Enhanced Reading Based on Virtualization Techniques**
Claudio Demartini (Politecnico of Turin, Italy); Andrea Sanna (Politecnico di Torino, Italy); Fabrizio Lamberti (Politecnico di Torino, Italy)

15:00 **Media Cloud: A Secure and Efficient Virtualization Framework for Media Service**
Jaekyung Lee (Hanyang University, Korea); Junggab Son (Hanyang university, Korea); Rasheed Hussain (Hanyang University & Information Security and Privacy Lab, Korea); Heekuck Oh (Hanyang University, Korea)

15:20 **On Thin-Clients and the Cloud; Can Smartphones and Tablets Really Reduce Electricity Consumption?**
Peter Corcoran (National University of Ireland, Galway, Ireland); Anders Andrae (Huawei Technologies CO., Ltd., Sweden)

15:40 **A Traffic Video Searching and Sharing Platform Based on Smart Wearable Devices**
Yen-Lin Chen (National Taipeh University of Technology, Taiwan); Shyan-Ming Yuan (National Chiao Tung University, Taiwan); Chuan-Yen Chiang (National Chiao Tung University, Taiwan); Shian-Bo Yang (National Chiao Tung University, Taiwan)
Consumer Device Recommendation Method for Web-Based Distributed Browsing
Yasuyuki Kataoka (Nippon Telegraph and Telephone Corporation & NTT Service Evolution Laboratory, Japan); Tomoki Watanabe (NTT Corporation, Japan); Kiyoshi Tanaka (Nippon Telegraph and Telephone Corporation, Japan); Tomohiro Yamada (Nippon Telegraph and Telephone Corporation, Japan)

TUT01: TUTORIAL: Flexible Computing for Personal Electronic Devices (Dr. Daniel Díaz Sánchez)

Room: N258
Title: "Flexible Computing for Personal Electronic Devices"

Abstract:
The tutorial will explain and test an experimental framework for Android called Light Weight Map Reduce that pursues enabling Elastic Personal Computing, a refinement of the "Elastic Computing" concept that allows personal electronics to automatically distribute the load among devices constituting a computing fabric seamlessly.

16:20 - 17:00
Break

Room: Hall Area

P01: Poster Session 1: Image/Video Technologies and A/V systems

Room: Hall Area

Two-Pass ICP with Color Constraint for Noisy RGB-D Point Cloud Registration
Seon-Min Rhee (Samsung Advanced Institute of Technology, Korea); Yong-Beom Lee (Samsung Advanced Institute of Technology, Korea); Hyong-Euk Lee (Advanced Media Lab, Samsung Advanced Institute of Technology & Samsung Electronics, Korea)

A Novel Framework for Extremely Low-light Video Enhancement
Minjae Kim (Korea University, Korea); Dubok Park (Korea University & School of Electrical Engineering, Korea); K. Han David (Office of Naval Research, USA); Hanseok Ko (Korea University, Korea)

Tile Boundary Sharing for Tile-based Vector Graphics Rendering
Jeongjoon Yoo (Samsung Advanced Institute of Technology & Samsung Electronics, Korea); Seokyoon Jung (Samsung Advanced Institute of Technology, Korea); Soojung Ryu (Samsung Advanced Institute of Technology, Korea); Jeongwook Kim (Samsung Advanced Institute of Technology, Korea)

Foreground Soft Segmentation for the Search Space Reduction
Eunji Cho (POSTECH, Korea); Dai-Jin Kim (Postech, Korea)

Implementation of a Video Streaming Security System for Smart Device
YongSung Jeon (Electronics and Telecommunications Research Institute, Korea)

Fast Motion Estimation Algorithm for Depth Map
Byung Tae Oh (Korea Aerospace University, Korea); Kwan-Jung Oh (Electronics and Telecommunications Research Institute, Korea)

Frame Rate Up-Conversion Method Based on Texture Adaptive Bilateral Motion Estimation
Jin Hyung Kim (Chungnam National University, Korea); Yun-Ho Ko (Chungnam National University, Korea); Hyun-Soo Kang (Chungbuk National University, Korea); Si-Woong Lee (Hanbat National University, Korea); Jae W. Kwon (University of Missouri, USA)

Improvement of 2-D Picture Quality for H.265/HEVC by Occluded Region Detection Using 3-D Depth Map
Shinya Iwasaki (Waseda University, Japan); Ryoki Takada (Waseda University, Japan); Yasutaka Matsuo (Waseda University & Japan Broadcasting Corporation (NHK), Japan); Jiro Katto (Waseda University, Japan)

Subjective Quality Estimation Based on Neural Networks for Stereoscopic Videos
Hossein Malekmohamadi (University of Surrey, United Kingdom); Anil Fernando (Center for Communications Research. University of Surrey, United Kingdom); Emad Danish (University of Surrey, United Kingdom); Ahmet Kondoz (University of Surrey, United Kingdom)

Real-time FPGA Implementation of Full HD@120Hz Frame Rate Up-Conversion System
Daehyun Kim (AnaPass, Inc., Korea)

Human Segmentation Based on GrabCut in Real-time Video Sequences
Sohee Park (Electronics and Telecommunications Research Institute, Korea); Jang-Hee Yoo (Electronics and Telecommunications Research Institute, Korea)

Fixed Cycle Huffman Decoding Instruction for Multi-format Decoder
Doo-Hyun Kim (Samsung Electronics, Korea); Joon Ho Song (Samsung Electronics, Korea); Do-Hyung Kim (Samsung Electronics, Korea); Shihwa Lee (SAIT Samsung Electronics, Korea)
17:00 - 18:20

1-12: OFDM-Applications II

Room: N260

17:00 Input Impedance Analysis of Wearable Antenna and Its Experimental Study with Real Human Body

Dairoku Muramatsu (The University of Tokyo, Japan); Fukuro Koshiji (Kokushikan University, Japan); Kohji Koshiji (Tokyo University of Science, Japan); Ken Sasaki (University of Tokyo, Japan)

17:20 Zero-Forcing ICI Canceller Using Iterative Detection for Mobile Reception of OFDM

Akira Nakamura (Tokyo University of Science, Japan); Kohei Ohno (Meiji University, Japan); Makoto Itami...
17:40 **A Modified Maximum Likelihood Method for SNR Estimation in OFDM Based Systems**
Sebastian Baumgartner (Chemnitz University of Technology, Germany); Gangolf Hirtz (TU Chemnitz, Germany); Andreas Baumgartner (Chemnitz University of Technology & Chair of Communication Networks, Germany)

18:00 **QoS-aware Fast BSS Transitions for Seamless Mobile Services and Load Balancing**
Young-Tak Kim (Yeungnam University, Korea); Hyungdong Hwang (Graduate School, Yeungnam University, Korea)

1-13: Camera Technologies II  "go to top"

Room: N262

17:00 **An Effective Phase-Unwrapping Method for Time-of-Flight Camera Based on 2D-Gaussian Model**
Mun-Cheon Kang (Korea University, Korea); Seok-Jae Kang (Korea University, Korea); Sung-Ho Chae (Korea University, Korea); Aldo Morales (Penn State Harrisburg, USA); Sung-Jea Ko (Korea University, Korea)

17:20 **Compact Camera Recorder for Super Hi-Vision**
Eiichi Miyashita (Japan Broadcasting Corporation, Japan); Takeshi Kajiyama (Japan Broadcasting Corporation, Japan)

17:40 **Wide Field of View (WFoV) Imaging for Consumer Devices**
Peter Corcoran (National University of Ireland, Galway, Ireland); Petronel Bigioi (DigitalOptics Corporation Europe Ltd. & National University of Ireland, Galway, Ireland); Piotr Stec (DigitalOptics Corporation Europe Ltd., Ireland)

18:00 **Gaze Tracking for Smart Consumer Electronics**
Wen-Chung Kao (National Taiwan Normal University, Taiwan); Sheng-Ju Wu (National Taiwan Normal University, Taiwan); Wei-Te Chang (National Taiwan Normal University, Taiwan)

1-14: Automotive II  "go to top"

Room: N264

17:00 **A New Traffic Information Service for Smart Consumer Devices**
Estrella Garcia-Lozano (University Carlos III of Madrid, Spain); Wolfgang Woerndl (Technical University of Munich – , Germany); Celeste Campo (University Carlos III of Madrid, Spain)

17:20 **An Adaptive Cooperative Scheme to Ensure Connectivity of Consumer Devices for Infotainment Services**
Eunjeong Jang (Kyungpook National University, Korea); Dong Seog Han (Kyungpook National University, Korea)

17:40 **Inferring Contexts of Driving Modes for Better User Experience of Mobile Service**
Jaemo Sung (Samsung Advanced Institute of Technology, Samsung Electronics, Korea); Minyoung Mun (SAIT, Samsung Electronics, Korea); Sangdo Park (Samsung Advanced Institute of Technology, Korea)

18:00 **Using Public Buses as Mobile Gateways in Vehicular Clouds**
Rasheed Hussain (Hanyang University & Information Security and Privacy Lab, Korea); Fizza Alvi, Engr. (Hanyang University, South Korea, Korea); Junggab Son (Hanyang university, Korea); Sangjin Kim (Korea University of Technology and Education & School of Computer Science and Engineering, Korea); Heekuck Oh (Hanyang University, Korea)

TUT02: TUTORIAL: The Power and Thermal Challenges for Smart Mobile Devices: from smartphones to wearable mobile devices (Dr. Hwisung Jung)  "go to top"

Room: N258

Title "The Power and Thermal Challenges for Smart Mobile Devices: from smartphones to wearable mobile devices"

Abstract:
A close look at today's smart mobile devices (i.e., smartphones and tablets) usage reveals that extending battery life has become a daunting, yet vital, task necessary for delivering a rich user experience. Such necessity, coupled with the ongoing advance in SoC (System-on-Chip) and the explosive growth for mobile device applications, makes managing power and thermal conditions ever more challenging. Furthermore, optimizing power consumption for wearable consumer electronics products (e.g., smartwatches) is becoming one of the primary development challenges of these devices. One solution is to devise an intelligent power management policy that can quickly analyze quantifiable features of mobile devices under considerations and accurately predict the system performance, which can subsequently be used to find the optimal power management technique. In this tutorial, the various challenges of power modeling, analysis, and estimation for such devices are reviewed, and some of power and thermal management techniques are discussed.
Welcome Reception (For all ICCE Attendees)
Room: N257/259/261

Saturday, January 11

08:30 - 09:00
Breakfast
Room: N257/259/261

09:00 - 10:00
Keynote. Steve Diamond (IEEE Cloud Computing Initiative)
Room: N257/259/261
Title: "Cloud Computing"
Abstract:
In only a few years, cloud computing has disrupted computing, impacting everything from governments, supercomputers, service providers, enterprise data centers, small businesses, to individual consumers. Enabled by the cloud, big data analytics has disrupted enterprises by giving managers unprecedented insight into their business. The next platform of computing, building on cloud computing, big data, mobile, social networking, and the Internet of Things, will compose an infrastructure encompassing billions of users, millions of applications, exabytes of data creation per day, and ultimately hundreds of billions of connected things. This "third platform" will be even more disruptive—changing not just computing or business, but the relationship between humans and society. The IEEE is uniquely positioned to enable and guide this transition. The IEEE Cloud Computing Initiative was founded to do this by leveraging the resources of the more than 40 IEEE Societies and Councils and the 425,000 technical professionals making up the IEEE for the benefit of humanity.

10:00 - 11:20
Workshop: IEEE Senior Member Elevation Event (Tom Coughlin)
Room: N258

2-1: Invited Session: Health/Medical Applications I
Room: N260

10:00 A Kinect-based Tai Chi Exercises Evaluation System for Physical Rehabilitation
Jiann-Der Lee (Chang Gung University, Taiwan); Chung-Hung Hsieh (Chang Gung University, Taiwan); Ting-Yang Lin (Chang Gung University, Taiwan)

10:20 Teeth Shape Modeling Pipeline for Oral Healthcare Appliances Development
Jacek Kustra (Philips Research, The Netherlands); Marko de Jager (Phillips Research, The Netherlands); Andrei Jalba (Eindhoven University of Technology, The Netherlands); Alexandru Telea (University of Groningen, USA)

10:40 Implementation of Dynamic-Range Enhancement and Super-Resolution Algorithms for Medical Image Processing
Hiroyuki Okuhata (Synthesis Corporation, Japan); Masanao Ise (Synthesis Corporation, Japan); Roberto Omaki (Synthesis Corporation, Japan); Hajime Nakamura (Osaka City University, Japan); Shinsuke Hara (Osaka City University, Japan); Isao Shirakawa (University of Hyogo, Japan)

11:00 Novel Electronic Medical Record-Based Stroke Registry System
Chien-Hung Chang (Chang Gung Memorial Hospital and College of Medicine, Chang Gung University, Taiwan); Tsong-Hai Lee (Chang Gung Hospital, Linkou Medical Center and Chang Gung University, Taiwan); Yeu-Jhy Chang (Chang Gung University, Taiwan); Mengkai Shieh (Russian Medical Academy of Postgraduate Education, Russia); Yao Shieh (Chang Gung University & University of California Irvine, Taiwan)
2-2: Motion Estimation & Compensation plus Scalable HEVC

Room: N262

10:00 A Highly-Parallel Approach on Motion Estimation for High Efficiency Video Coding (HEVC)
Stefan Radicke (Hochschule der Medien, Germany); Jens-Uwe Hahn (Hochschule der Medien, Germany);
Christos Grecos (University of West of Scotland, United Kingdom); Qi Wang (University of the West of
Scotland, United Kingdom)

10:20 2D Cache Architecture for Motion Compensation in a 4K Ultra-HD AVC and HEVC Video Codec
System
Hetul Sanghvi (Texas Instruments Inc, India)

10:40 Adaptive Search Range Method for Spatial Scalable HEVC
Hamid Reza Tohidypour (University of British Columbia, Canada); Mahsa T. Pourazad (TELUS
Communications Company, Canada); Panos Nasiopoulos (University of British Columbia, Canada)

11:00 Fast Mode Decision for SNR Scalability in SHVC
Robin Bailleul (Ghent University - iMinds & iMinds, Belgium); Jan De Cock (Ghent University - iMinds,
Belgium); Rik Van de Walle (Ghent University - IBBT, Belgium)

2-3: Automotive III

Room: N264

10:00 A Next-hop Selection Scheme for Emergency Message Propagation in VANETs
Chunxiao Li (Yangzhou University & Waseda University, P.R. China); Dawei He (Yangzhou University, P.R.
China); Zhenni Pan (Waseda University, Japan); Mei Sun (Sichuan University, P.R. China); Bin Li (Yangzhou
University, P.R. China)

10:20 Driver's Lane-change Intent Identification Based on Pupillary Variation
Young-Min Jang (Kyungpook National University, Korea); Rammohan Mallpeddi (Kyungpook National
University, Korea); Minho Lee (Kyungpook National University, Korea)

10:40 Improved Ground Plane Detection in Real Time Systems Using Homography
Prashanth Viswanath (Texas Instruments, India); Suriya Narayanan (Texas Instruments, India)

11:00 An Adaptive EDCA Reservation Scheme for Infotainment Services in IEEE 802.11p
Hee Chang Lee (Kyungpook National University, Korea); Dong Seog Han (Kyungpook National University,
Korea)

11:20 - 11:40

Break

Room: Hall Area

11:40 - 13:20

2-4: Wireless Networks I

Room: N260

11:40 H.264/AVC Video Streaming Over WirelessMAN-Advanced Systems Using Multi-Antennas and
HQAM
Jaeyoung Park (Yonsei University, Wonju, Korea); Yusik Yang (Yonsei University, Wonju, Korea); Jaekwon
Kim (Yonsei University Wonju, Korea)

12:00 MIMO Equalization for Wireless Home Connectivity
Hae Yong Park (Kyungpook National University, Korea); Dong Seog Han (Kyungpook National University,
Korea)

12:20 Downlink Soft Handover Using Multi-Cell MIMO for 4G-LTE Smart-Phones
Sunghyun Cho (Hanyang University, Korea); Ji-Woong Choi (DGIST, Korea)

Pouya Kamalinejad (University of British Columbia, Canada); Kamyar Keikhosravy (University of British
Columbia, Canada); Michele Magna (University of Bologna, Italy); Shahriar Mirabbasi (University of British
Columbia, Canada); Victor CM Leung (The University of British Columbia, Canada); Luca Benini (University
of Bologna, Italy)

13:00 Matrix Network Coding Based Multicast Scheme Over Wireless Multihop Networks
Kwanghun Han (Samsung Advanced Institute of Technology, Korea); Misuk Huh (Samsung Electronics,
Korea); Kwang Taik Kim (Samsung Advanced Institute of Technology, Korea); Kyunghun Jang (Samsung
Advanced Institute of Technology, Korea)
Detection and Repair of Flash-Eye in Handheld Devices
Peter Corcoran (National University of Ireland, Galway, Ireland); Petronel Bigioi (DigitalOptics Corporation Europe Ltd. & National University of Ireland, Galway, Ireland); Florin Nanu (Tessera, Romania)

Blind Image Restoration Based on Total Variation Regularization and Shock Filter for Blurred Images
Kyosuke Ohkoshi (Nagoya Institute of Technology, Japan); Masanao Sawada (Nagoya Institute of Technology, Japan); Tomio Goto (Nagoya Institute of Technology, Japan); Satoshi Hirano (Nagoya Institute of Technology, Japan); Masaru Sakurai (Nagoya Institute of Technology, Japan)

Color Image Interpolation for High Resolution Display Based on Adaptive Directional Lifting
Ramesh Lama (Chosun univ., Korea); Moo-Rak Choi (LG Electronics, Korea); Joo-Woo Kim (SungGwang Company, Korea); Jae-Young Pyun (Chosun University & Dept. of Information and Communication Engineering, Korea); Goo-Rak Kwon (Chosun University, Korea)

Image Color Correction Via Feature Matching and RANSAC
Ning Xu (Dolby Laboratories, Inc., USA); James Crenshaw (Dolby Laboratories, Inc., USA)

Correction of the Overexposed Region in Digital Color Image
Dae-Hong Lee (Korea University, Korea); Yeo-Jin Yoon (Korea University, Korea); Min-Young Cho (Korea University, Korea); Sung-Jea Ko (Korea University, Korea)

A Depth-Based Joints Estimation Algorithm for Get Up and Go Test Using Kinect
Enea Cippitelli (Università Politecnica delle Marche, Italy); Samuele Gasparini (Università Politecnica delle Marche, Italy); Ennio Gambi (Università Politecnica delle Marche, Italy); Susanna Spinsante (Università Politecnica delle Marche & Arielab Srl, Italy)

A Wireless Near-Infrared Imaging System Design for Breast Tumor Detection
Ching-Ju Cheng (National Chiao Tung University, Taiwan); Shih-Yang Wu (National Chiao Tung University, Taiwan); Wei Chin Huang (National Chiao Tung University, Taiwan); Hsiang-Wen Hou (National Chiao Tung University, Taiwan); Wai-Chi Fang (National Chiao Tung University, Taiwan)

Textile-based Capacitive Sensor for a Wireless Wearable Breath Monitoring System
Chang-Ming Yang (Ming Young Biomedical Corp., Taiwan); Tsu-lin Yang (Ming Young Biomedical Corp., Taiwan); Chih-Chung Wu (Ming Young Biomedical Corp., Taiwan); Shu Hui Hung (NCHC & NCKU, Taiwan); May-Hua Liao (Yuan Pei University, Taiwan); Mei-Ju Su (Yuanpei University, Taiwan); Hsiao-Chi Hsieh (National Taiwan University, Taiwan)

Orchestrating Assistive Technology: Enabling Autistic People to Communicate with Others
Andres Mejia Figueroa (Autonomous University of Baja California, Mexico); Reyes Juarez Ramirez (Universidad Autonoma de Baja California, Mexico)

Motor Rehabilitation Based on Brain Machine Interface and Microsoft Kinect
Chungki Lee (Korea Institute of Science and Technology, Korea); Hoyeoul Park (Yonsei University, Korea); Junghchae Kim (LG CTO, Korea); Byeongnam Kim (Korea Institute of Science and Technology, Korea); Laehyun Kim (Korea Institute of Science and Technology, Korea); Gyuhyun Kwon (Korea Institute of Science and Technology, Korea)

End-to-End 3D Video Transmission in Different Networks

Title: "End-to-End 3D Video Transmission in Different Networks"

Abstract:
It is clear from the history of 3D video, that while public popularity of the technology has waxed and waned, development of the technology has continued. The repeated revivals point to a real public interest in 3D technology. Previous failures have been caused by significant quality problems in the production and projection of 3D movies, and a lack of good affordable 3D technology for the home. While significant improvements in camera and projection technology have been made over the years, as well as the introduction of affordable 3DTVs for the home, one of the most important developments has been the introduction of digital video processing technology. Many of the problems associated with previous 3D booms can be put down to production and projection problems that are difficult to spot and to fix with the naked eye. Today, these problems have also been solved to a satisfactory level. However, the challenges in 3D video transmission with different networks and its quality at the end have not yet been fully analysed and discussed.
13:20 - 14:40

Lunch Panel: Next Generation Mobility

Room: N257/259/261

That device in your pocket communications, computes, entertains, informs, and can perform the role of a personal productivity assistant. The Next Generation of Mobility is already here and some would question if we are approaching the end of innovation. We have assembled a diverse panel of industry experts and technologists to challenge any belief that there is no next-next generation. This panel is interactive-- each panel member will open with brief remarks about challenges to face and some avenues for innovation. The interactive part comes during Q&A when we want your questions and comments to enrich and contribute to a new vision for defining the next-next generation of mobility.

Schedule:
1) Kay Johansson. Stone Valley Partners
2) Joe Decuir. Cambridge Silicon Radio
3) Robert Milner. Cambridge Consultants Limited
4) Anil Kripalani. Wirefree.Com
5) John Walley. Broadcom Inc

14:40 - 16:20

2-7: Wireless Networks II

Room: N260

14:40 Peer-to-Peer Communications in a Cellular Network
Jingjing Zhang (Nanjing University of Science and Technology, P.R. China); Mao Wang (Nanjing University of Science and Technology, P.R. China); Jun Zou (Nanjing University of Science and Technology, P.R. China); Min Hua (Nanjing University of Science and Technology, P.R. China)
15:00 Reconfigurable Formation Method for Bluetooth Scatternet
Chih-min Yu (Chung Hua University, Taiwan); Yih-Bin Yu (Chung Hua University, Taiwan)
15:20 Multi-Device-to-Multi-Device Communication in Cellular Network for Efficient Contents Distribution
Dongho You (Seoul National University of Science and Technology, Korea); DongHo Kim (Seoul National University of Science and Technology, Korea)
15:40 Scalable and Energy Efficient WiFi Management
Nakjung Choi (Bell Labs, Alcatel-Lucent, Korea); Jeongran Lee (Bell Labs, Alcatel-Lucent, Korea); Jaehyun Hwang (Bell Labs, Alcatel-Lucent, Korea)
16:00 Real-Time Implementation of Interference Neutralization for Multi-Source Multi-Hop Wireless Networks
Wonjae Shin (Samsung Advanced Institute of Technology (SAIT), Korea); Jong Bu Lim (Samsung Electronics Co., Ltd., Korea); Wonjong Noh (Samsung Advanced Institute of Technology, Korea); KyungHun Jang (Samsung Advanced Institute of Technology (SAIT), Korea); Sangseok Yun (KAIST, Korea); Jinho Baek (KAIST, Korea); Jeongseok Ha (KAIST, Korea)

2-8: Image Quality enhancement II

Room: N262

14:40 Film Grain Noise Superimposition for Film Grain Management
Dietmar Hepper (Technicolor, Germany)
15:00 Real-Time Spatially Adaptive Image Restoration Using Truncated Constrained Least Squares Filter
ChangHun Cho (Chung-Ang University, Korea); Jaehwan Jeon (Chung-Ang University, Korea); Joonki Paik (Chung-Ang University, Korea)
15:20 Single Image Super-Resolution by Modifying Sampling Positions
Jaehwan Jeon (Chung-Ang University, Korea); ChangHun Cho (Chung-Ang University, Korea); Joonki Paik (Chung-Ang University, Korea)
15:40 A Ghost-Free Pseudo-Multiframe HDR
Young-Su Moon (Samsung Advanced Institute of Technology, Samsung Electronics, Korea); Jonghun Lee (SAIT, Samsung Electronics, Korea); Yong Min Tai (SAIT, Samsung Electronics, Korea); Junguk Cho (SAIT, Korea)
TUT04: TUTORIAL: New Connectors for the New Trend (Joshua Benjestorf)
**Improved Location Estimation Based on the Pressure Sensor for Car Navigation System**
Ryosuke Otsuka (Kanagawa Institute of Technology, Japan); Shinji Kitagami (Mitsubishi Electric Corp., Japan); Yoshiaki Terashima (Mitsubishi Electric Corp., Japan); Masashi Saito (Mitsubishi Electric Corporation, Japan); Ryozo Kiyohara (Kanagawa Institute of Technology, Japan)

**Accelerometer-based HUD Input for Car Navigation**
Arata Ishizaki (Kanagawa Institute of Technology, Japan); Shotaro Ikegami (Kanagawa Institute of Technology, Japan); Takatomo Yamabe (Kanagawa Institute of Technology, Japan); Shinji Kitagami (Mitsubishi Electric Corp., Japan); Ryozo Kiyohara (Kanagawa Institute of Technology, Japan)

**An Implementation of Smartphone-based Driver Assistance System Using Front and Rear Camera**
Kyungwon Chang (Sungkyunkwan University, Korea); Byung-Hun Oh (Sungkyunkwan University, Korea); Kwang-Seok Hong (Sungkyunkwan University, Korea)

**A Signal Component Analyzing Method of Physiological Information for Automotive Safety**
Molin Jia (Waseda University, Japan)

**Localization Algorithm for GSM Mobiles Based on RSSI and Pearson’s Correlation Coefficient**
Yunzhou Zhang (Northeastern University, P.R. China); Huiyu Liu (Northeastern University, P.R. China); Wenyan Fu (Northeastern University, P.R. China); Aichun Zhou (Northeastern University, P.R. China); Liang Mi (Worcester Polytechnic Institute, USA)

**Robust Hand Segmentation and Tracking to Illumination Variation**
Kook-Yeol Yoo (Yeungnam University, Korea)

**Sensor Device Virtualization for Mobile Clouds**
Jin-Hwan Jeong (ETRI, Korea); Sung Jin Hur (Electronics and Telecommunications Research Institute (ETRI), Korea)

**Cepstrum Smoothing-based Feature Extraction Method for Electric Loads Disaggregation**
Sung-Kwan Joo (Korea University, Korea); Seongbae Kong (Korea University, Korea); Youngwook Kim (Korea University, Korea); Jin Hak Kim (Korea Power Exchange, Korea)

**A Peak-Shift Control Method for Charging and Discharging of the Battery in an Ultrabook**
Y. W. Bai (Fu Jen Catholic University, Taiwan); Chun-Hung Cheng (Fu Jen Catholic University, Taiwan)

**Gesture Recognition with Low Quality Signal Over Low Energy Bluetooth 4.0**
Yang Zhao (GE Global Research Center, USA); J. Brandon Laflen (GE Global Research, USA)

**Electrical Event Identification Technique for Monitoring Home Appliance Load Using Load Signatures**
Sung-Kwan Joo (Korea University, Korea); Youngwook Kim (Korea University, Korea); Seongbae Kong (Korea University, Korea); Rakkyung Ko (Korea University, Korea)

**Scheduling of Air-Conditioner Using Occupancy Prediction in a Smart Home/Building Environment**
Sung-Kwan Joo (Korea University, Korea); Hyung-Chul Jo (Korea University, Korea); Jeehong Lee (Korea University, Korea)

**Impact of Software Transactional Memory in Mobile Devices**
Junwhan Kim (Virginia Tech, USA)

**Rapid Development of High Performance Applications for Heterogeneous Multi-core Smart Devices**
Jeong-Si Kim (Electronics and Telecommunications Research Institute, Korea); YungJoon Jung (ETRI, Korea)

**Nop Compression Scheme for High Speed DSPs Based on VLIW Architecture**
Taisong Jin (Samsung Advanced Institute of Technology, Korea); Minwook Ahn (Samsung Advanced Institute of Technology, Korea); Donghoon Yoo (Samsung Advanced Institute of Technology, Korea); Dongkwan Suh (Samsung Advanced Institute of Technology, Korea); Yoonseong Choi (Samsung Electronics, Korea); Sooyeon Lee (SAIT Samsung Electronics, Korea)

**Application-based Power Management System for Smartphones**
Seunghyun Yoon (University of SungKyunKwan, Korea); Sunghin Cho (SungKyunKwan Univ, Korea); Jae W Jeon (Sungkyunkwan University, Korea)

**High Frequency Wireless Power Transfer System for Robot Vacuum Cleaner**
Jehoon Baek (Samsung Advanced Institute of Technology, Korea); Chi-Hyung Ahn (Samsung Advanced Institute of Technology, Korea); Bongchul Kim (Samsung Electronics, Korea); Seungdeog Choi (University of Akron, USA); Sanghjin Kwak (Chung-ang University, Korea)

**Investigation of Wireless Power Transfer in Multi-Coil Environment**
Hyeonseok Hwang (Korea University, Korea); Bumsoo Lee (Korea University, Korea); Jun Il Moon (Korea University & ASIC, Korea); Sechun Park (Korea University, Korea); Chan-Hui Jeong (Korea University, Korea); Soo-Won Kim (Korea University, Korea)

**Microgrids: Technical and Security Recommendations for Future Implementations**
Danai Chasaki (Villanova University, USA); Nisha Kondrath (Villanova University, USA)

**Statistical Analysis Service of e-Healthcare Record on iPad System**
Chan-Yong Park (ETRI (Electronics Telecommunications Research Institute), Korea); Joon-Ho Lim (Electronics and Telecommunications Research Institute, Korea); Hyung Soo Han (Kyungpook National University, Korea)

**A Cost-Effective Solution for Realizing Talking Appliances for the Visually Impaired**
Tomohiro Harakawa (University of Tsukuba, Japan); Akira Oyamada (University of Tsukuba, Japan); Hiroharu Ito (University of Tsukuba, Japan); Shuichi Oikawa (University of Tsukuba, Japan); Yukio Fukui (University of Tsukuba, Japan)

**Arbitration and Shuffling Algorithm for Processing Multiple Commands in SDRAM Controller**
A Fast RMS Meter for Detecting Sag Events in Household Environments
José-Maria Flores-Arias (University of Córdoba, Spain); Francisco J. Bellido Outeiriño (University of Córdoba, Spain); Antonio Moreno-Munoz (University of Córdoba, Spain)

17:00 - 18:20

Workshop: How to get your Research Published (Peter Corcoran)

Room: N258

2-10: Invited Session: Health/Medical Applications II

Room: N260

17:00 Healthcare Application of Smart Home User’s Behavior Prediction
Dmitry Vavilov (T-Systems, Russia); Alexey Melezhik (Gazprom Promgaz, Russia); Ivan Platonov (St.-Petersburg State Polytechnical University, Russia)

17:20 Information Delivery Tactile Pavings Using Visible Light Communication
Kuniyoshi Okuda (Ryukoku University, Japan); Shohei Oda (Ryukoku, Japan); Tomoo Nakamura (Ryukoku University, Japan); Wataru Uemura (Ryukoku University, Japan)

17:40 The Design and Development of a Wearable Posture Monitoring Vest
Wen-Yen Lin (Chang Gung University, Taiwan); Ming-Yee Lee (Chang Gung University, USA); Wen-Cheng Chou (Chang-Gung University, Taiwan)

18:00 A Medial Point Cloud Based Algorithm for Dental Cast Segmentation
Jacek Kustra (Philips Research, The Netherlands); Marko de Jager (Phillips Research, The Netherlands); Andrei Jalba (Eindhoven University of Technology, The Netherlands); Alexandru Telea (University of Groningen, USA)

2-11: Efficient processing and mapping on CPU/ GPU

Room: N262

17:00 Accelerating Image Super-Resolution Regression by a Hybrid Implementation in Mobile Devices
Angelos Amanatiadis (Democritus University of Thrace, Greece); Loukas Bampis (Democritus University of Thrace, Greece); Antonios Gasteratos (Democritus University of Thrace, Greece)

17:26 Web-based Image Processing Using JavaScript and WebCL
Myeongjin Cho (Korea University, Korea); Seon Wook Kim (Korea University, Korea); Youngsun Han (Kyungil University, Korea)

17:53 Resource-Constrained Spatial Multi-Tasking for Embedded GPU
Woohyun Joo (Samsung Electronics & Sungkyunkwan University, Korea); Dongkun Shin (Sungkyunkwan University, Korea)

2-12: General Session

Room: N264

17:00 Disappearing Icons: Informative Effect Through Changing Color Attributes of App Icons
Jiho Jang (KAIST, Korea); Hyeon-Jeong Suk (KAIST, Korea)

17:16 Speech-to-Text-based Life Log System for Smartphones
Dongmahn Seo (Korea Institute of Science and Technology, Korea); Suhyun Kim (Korea Institute of Science and Technology, Korea); Gyuwon Song (Korea Institute of Science and Technology & University of Science and Technology, Korea); Seung-gil Hong (Korea Institute of Science and Technology, Korea)

17:32 Channel-prediction Based Noise Reduction Algorithm for Dual Microphone Smartphones
Keunsang Lee (Yonsei University, Korea); Joseph Cho (Institute of Sigtech Ltd., Korea); Young-cheol Park (Yonsei University, Korea)

17:48 Interactive Clothing Retrieval System
Jia-Lin Chen (National Taiwan University, Taiwan); Wan-Yu Chen (National Taiwan University & National Taiwan University, Taiwan); I-Kuei Chen (National Taiwan University, Taiwan); Chung-Yu Chi (National Taiwan University, Taiwan); Liang-Gee Chen (DSP/IC Design Lab., National Taiwan University, Taiwan)

18:04 User Generated Highlight System for Baseball Games with Social Media Activities
Dongmahn Seo (Korea Institute of Science and Technology, Korea); Suhyun Kim (Korea Institute of Science and Technology, Korea); Hogun Park (Korea Institute of Science and Technology, Korea); Heedong Ko (Korea Institute of Science and Technology, Korea)
Sunday, January 12

08:30 - 09:00

Breakfast

Room: N257/259/261

09:00 - 10:00


Room: N257/259/261
Title "Beyond Megapixels: The Future of Computational Imaging in Mobile Devices"

Abstract
When will your camera be as smart as your phone? Going beyond simple megapixel count, what else can consumers expect from cameras in their mobile devices?
Advances in computational imaging are enabling a new generation of image and video capture. Depth-based photography, along with extreme low-light sensitivity and ultra-fast shooting, will maximize image quality and drive consumers toward the ability to capture "the perfect picture" every time. The user experience of taking images and video will be forever changed by the ability to refocus after the fact, select multiple objects of focus, create a depth map and 3D model, all on the mobile device.

10:00 - 11:20

Workshop: Doctoral Workshop (Carsten Gremzow)

Room: N258

"The doctoral workshop's primary function is to provide PhD students with feedback they don't usually receive from typical conference or workshop sessions. The latter are primarily designed as a one-way communication between the presenter and the audience, followed by a few questions which might include some feedback. If so, it is usually targeted at technical aspect of the work rather than formal aspect such as clarity of presentation or research strategy. The workshop will provide the means to help PhD students improve on their conference paper, presentation style and PhD strategy."

10:00 Welcome and brief Introduction
10:05 Robin Bailleul
10:30 Andrés Mejía Figueroa
10:55 Estrella Garcia-Lozano,

3-1: Artificial Reality and Human Feedback in Consumer Applications

Room: N260

10:00 Level-of-Detail AR: Managing Points of Interest for Attentive Augmented Reality
Min-Hyuk Sung (Korea Institute of Science and Technology, Korea); Yongmin Choi (Korea Institute of Science and Technology & Yonsei University, Korea); Heedong Ko (Korea Institute of Science and Technology, Korea); Jae-In Hwang (Korea Institute of Science and Technology, Korea)

10:20 Smart Booklet: Tour Guide System with Mobile Augmented Reality
Heeseung Choi (Korea Institute of Science and Technology, Korea); Gyu Chull Han (Korea Institute of Science and Technology, Korea); Ig-Jae Kim (Korea Institute of Science and Technology & MIT Media Lab, Korea)

10:40 MyMusicShuffler: Mood-Based Music Recommendation with the Practical Usage of Brainwave Signals
3-2: Motion Estimation

Room: N262

10:00 **Region-based Moving Object Detection Using Spatially Conditioned Nonparametric Models in a GPU**
Daniel Berjón (Universidad Politécnica de Madrid, Spain); Carlos Cuevas (Universidad Politécnica de Madrid, Spain); Francisco Morán (Universidad Politécnica de Madrid, Spain); Narciso García (Universidad Politécnica de Madrid, Spain)

10:26 **An Hierarchical Motion Estimation Method Using Adaptive Image Down-sizing**
Hyungjun Lim (Samsung Electronics, Korea)

10:53 **Adaptive Multi-resolution Motion Estimation Using Texture-based Search Strategies**
Xianghu Ji (Peking University, P.R. China); XiangHu Ji (Peking University, P.R. China); Chuang Zhu (Peking University, P.R. China); Xiaodong Xie (JDL, P.R. China); Wen Gao (ICT-ISVISION Joint R&D Laboratory for Face Recognition, CAS, P.R. China)

3-3: Hardware Architectures I

Room: N264

10:00 **Tailor-made SSD Using a Genetic Algorithm**
Hanchan Jo (Samsung Electronics Co., Ltd., Korea); Hyunchan Park (Korea University, Korea); Chuck Yoo (Korea University, Korea)

10:20 **Low-power Reconfigurable Audio Processor for Mobile Devices**
Seunghun Jin (Samsung Advanced Institute of Technology, Korea); Brad Seo (Samsung Advanced Institute of Technology, Korea); Yeon-Gon Cho (Samsung Advanced Institute of Technology, Korea); Soojung Ryu (Samsung Advanced Institute of Technology, Korea)

10:40 **Performance of OFDM-based Power Line Communication Under Asynchronous Noise**
Srikrishnan Jagannathan (Penn State University, USA); Aldo Morales (Penn State Harrisburg, USA); Sedig S Agili (Penn State University, USA)

11:00 **Optimization of Conjugate-Pair Split-Radix FFT Algorithm for SIMD Platforms**
Stanislav Ocovaj (RT-RK Computer Based Systems LLC, Serbia); Zeljko Lukac (RT-RK Computer Based Systems LLC, Serbia)

11:20 - 11:40

Break

Room: Hall Area

11:40 - 13:20

3-4: A/V Systems

Room: N260

11:40 **A Watermarking System for Adaptive Streaming**
Dmitri Jarnikov (Eindhoven University of Technology & Irdeto, The Netherlands); Erik Hietbrink (Irdeto, The Netherlands); Mark Arana (The Walt Disney Studios, USA); Jeroen Doumen (Irdeto B.V., The Netherlands)

12:00 **A Flexible Multi-Topology SIP Synchronization Model**
Nils Hellhund (Technische Hochschule Mittelhessen, Germany); Bastian Zeller (Research Assistant, Germany); Christian Köbel (University of Applied Sciences - Technische Hochschule Mittelhessen, Germany); Christopher Köhnen (City University London, United Kingdom); Rudolf Jäger (Technische Hochschule Mittelhessen - University of Applied Sciences, Germany)

12:20 **Real-time AV Synchronization Delay Measurement for Multimedia Devices**
Istvan Papp (University of Novi Sad, Serbia); Milan Savic (Faculty of Technical Sciences, University of Novi Sad, Serbia); Milan Z. Bjelica (University of Novi Sad & iWedia, Serbia); Jelena Kovacevic (University of Novi Sad, Serbia)
12:40 An Algebraic Approach to the Design of Low Complexity Personalized Video Playlist
Masoud Alghoniemy (University of Alexandria, Egypt)

13:00 Emotion-Grading Online KTV System
Oscal T.-C. Chen (National Chung Cheng University, Taiwan); Guan Ting Liu (National Chung Cheng UNiv.,
Taiwan); Jhen Jhan Gu (National Chung Cheng UNiv., Taiwan); JenYi Pan (National Chung Cheng UNiv.,
Taiwan)

3-5: Object Detection and Tracking

Room: N262

11:40 Multi-Class Moving Target Detection with Gaussian Mixture Part Based Model
Jie Yang (Wuhan University of Technology, P.R. China); Yadong Sun (School of Information Engineering,
Wuhan University Of Technology, P.R. China); Meijun Wu (Wuhan University of Technology, P.R. China);
Qingnian Zhang (Wuhan University of Technology, P.R. China)

12:00 Texture-less Object Recognition Using Contour Fragment-Based Features with Bisected Local
Regions
Dong Hwan Kim (Korea Institute of Science and Technology, Korea); Sung-Kee Park (Korea Institute of
Science and Technology, Korea)

12:20 Vehicle Recognition in Two Non-Overlapping Views
Shih-Chung Hsu (National Tsing-Hua University, Taiwan); Tzung-Yu Hsieh (National Tsing Hua University,
Taiwan); Chung-Lin Huang (National Tsing Hua University, Taiwan)

12:40 Real Time Static/Dynamic Obstacle Detection for Visually Impaired Persons
Ruxandra Tapu (Institut Telecom / Telecom SudParis, France); Bogdan Mocanu (Institut TELECOM,
France); Titus Zaharia (Institut TELECOM, France)

13:00 Automated Real-Time Surveillance for Ambient Assisted Living Using an Omnidirectional
Camera
Lars Meinel (Technische Universität Chemnitz, Germany); Michel Findeisen (Chemnitz University of
Technology, Germany); Markus Heß (Chemnitz University of Technology, Germany); André Apitzsch
(Chemnitz University of Technology, Germany); Gangolf Hirtz (TU Chemnitz, Germany)

3-6: Networking: Sensing and Applications

Room: N264

11:40 SVC-based Hybrid Video Streaming in Mobile CE Devices
Jaehyun Hwang (Bell Labs, Alcatel-Lucent, Korea); Nakjung Choi (Bell-Labs, Alcatel-Lucent, Korea);
Junghwan Lee (Korea University, Korea); Chuck Yoo (Korea University, Korea)

12:00 Elastic Participatory Sensing Systems
Daniel Díaz-Sánchez (Universidad Carlos III de Madrid, Spain); Patricia Arias (Universidad Carlos III de
Madrid, Spain); Rosa Sánchez (Carlos III University of Madrid, Spain); Florina Almenares (Universidad
Carlos III de Madrid, Spain); Andrés Marín López (University Carlos III of Madrid, Spain)

12:20 A Reference Mobile System for Extending Content in Dynamic Domestic Environments
Augusto Morales (Technical University of Madrid, Spain); Tomás Robles (Technical University of Madrid,
Spain); Ramon Alcarria (Technical University of Madrid, Spain); Edwin Cedeño (Technical University of
Madrid, Spain)

12:40 Zone-aware Service System with Nomadic Resources for Cost-Effective Pervasive
Infrastructure
Daebeom Jeong (Chung-Ang University, Korea); Sunghoi Park (Chung-Ang University, Korea); Jinsung Byun
(Chung-Ang University, Korea); Insung Hong (Chung-Ang University, Korea); Sehyun Park (Chung-Ang
University, Korea)

13:00 A Scalable User Interface Framework for Multi-Screening
Yuseok Bae (ETRI, Korea); Bong-Jin Oh (ETRI & University of Chungnam, Korea); Jongyoul Park (ETRI,
Korea)

TUT05: TUTORIAL:High-Speed Transceiver Performance of FPGAs in Next-Gen Mobility Applications
(John Jones)

Room: N258

Title: "High-Speed Transceiver Performance of FPGAs in Next-Gen Mobility Applications"

Abstract:
FPGAs are an integral component of the interface between the baseband processing section (Radio Equipment
Control, or REC) and the RF transmitter/receiver section (Radio Equipment or RE) in many wireless base stations.
Where Altera FPGAs are used in these applications, their compliance to the requirements of the Open Base
Station Standard Initiative (OBSAI) and the Common Public Radio Interface (CPRI) is vitally important. Altera
FPGAs are also used in mobile back haul applications as the interface between the wireless and the wired portions of the mobile network communications infrastructure. In both of these applications, the FPGAs are often required to meet the requirements of the SFF-8431 specification for the enhanced small form factor pluggable module because of the use of optics as the preferred method of interconnecting different pieces of equipment.

Altera FPGAs can enable systems to meet the requirements of OBSAI, CPRI, and SFF-8431 where they apply in base station designs. Altera FPGAs include high-speed transceivers integrated with reconfigurable signal processing circuitry which enables cost-effective system designs. These system designs can take advantage of printed circuit boards made of low-cost materials and can reduce the requirements for additional signal conditioning circuits near the connectors.

The Altera Stratix V and Stratix IV FPGAs are targeted for the requirements of OBSAI, CPRI, and SFF-8431. This tutorial highlights some recent measurement results regarding the compliance of these FPGAs to the requirements of these standards. The tutorial will present measurement methods for evaluating compliance to these specifications and some real-world measurement results related to these specifications. Attendees will be exposed to the measurement methods used to qualify Altera FPGAs to these specifications. These techniques have applications beyond FPGAs. Attendees will also see application examples of the use of FPGAs in the wireless communication infrastructure. These examples will show how Altera FPGAs can provide robust solutions with fast time-to-market for next-generation mobility applications.

13:20 - 14:40

Awards Ceremony and Discussion Panel: Best of CES<"go to top">

Room: N257/259/261

Did you arrive too late to catch the excitement of the CES exhibit floor, or perhaps your feet got too soar to make it through the extra miles of aisles?
If so, join us for lunch on Sunday and listen to our panel of ICCE insiders who spent time at CES to gather up their list of the newest and most interesting finds on the exhibit floor. Bring your own list of the best of the best to lunch and we will ask for contributions from the floor on what you want to add to our panel member’s observations.

Schedule
1) Tom Coughlin
2) Stefan Mozar
3) Rich Doherty
4) Shawn DuBravac

14:40 - 16:20

3-7: 3D Video<"go to top">

Room: N260

14:40 Quality Control of Conditional Replenishment Algorithm for Hybrid 3DTV with Mixed Resolution
Min-Suk Bang (Kookmin University, Korea); Dong Wook Kang (Kookmin University, Korea); Sung-Hoon Kim (Electronics & Telecommunications Research Institute, Korea); Se Yoon Jeong (Electronics & Telecommunications Research Institute, Korea); Kyeong Hoon Jung (Kookmin University, Korea)

15:00 A Real-Time System for Object Detection and Location Reminding with RGB-D Camera
I-Kuei Chen (National Taiwan University, Taiwan); Chung-Yu Chi (National Taiwan University, Taiwan); Szu-Lu Hsu (National Taiwan University, Taiwan); Liang-Gee Chen (DSP/IC Design Lab., National Taiwan University, Taiwan)

15:20 A 3D Model-based Multi-camera Monitoring System for Panoramic Video
Yongwoo Cho (Kyunghee University & Media Lab, Korea); Joo Myoung Seok (Electronics and Telecommunications Research Institute, Korea); Doug Young Suh (Kyunghee University, Korea)

15:40 Effect of High Frame Rates on 3D Video Quality of Experience
Amin Banitalebi-Dehkordi (University of British Columbia & Digital Multimedia Lab, Canada); Mahsa T. Pourazad (TELUS Communications Company, Canada); Panos Nasiopoulos (University of British Columbia, Canada)

16:00 Perceptual Distortion Modeling for Side-by-Side 3D Video Delivery
César Díaz (Universidad Politécnica de Madrid, Spain); Jesús Gutiérrez (Universidad Politécnica de Madrid, Spain); Julián Cabrera (Universidad Politécnica de Madrid, Spain); Fernando Jaureguizar (Universidad Politécnica de Madrid, Spain); Narciso García (Universidad Politécnica de Madrid, Spain)
3-8: Networking: Protocols and Algorithms

Room: N262

14:40 **The Optimal Joint Multicast Routing and Scheduling in Multi-hop Wireless Networks**
Jinchul Choi (Electronics and Telecommunications Research Institute, Korea); HyoChan Bang (ETRI, Korea);
Chae-Woo Lee (Ajou University, Korea)

15:05 **CCN Naming Scheme for Scalable Routing and Incremental Deployment**
Bae Youngin (Samsung Advanced Institute of Technology, Korea); JaeHoon Kim (Samsung Electronics, Korea);
Myeong-Wuk Jang (Samsung Advanced Institute of Technology, Korea); Byoung-Joon BJ Lee
(Samsung Electronics, Advanced Institute of Technology, Korea)

15:30 **Enhanced Time-based Interest Protocol in Content-Centric Networking (CCN)**
Joonghong Park (Samsung Electronics & SAIT, Korea); JaeHoon Kim (Samsung Electronics, Korea);
Myeong-Wuk Jang (Samsung Advanced Institute of Technology, Korea); Byoung-Joon BJ Lee (Samsung
Electronics, Advanced Institute of Technology, Korea)

15:55 **A Privacy-Preserving Authentication and Sybil Detection Protocol for Vehicular Ad Hoc Networks**
Thiago Sales (Federal University of Alagoas, Brazil); Hyggo Almeida (Federal University of Campina Grande, Brazil);
Angelo Perkusich (Federal University of Campina Grande, Brazil); Leandro M Sales (Federal University of Alagoas & Federal University of Campina Grande, Brazil); Marcello de Sales (Intuit, Inc., USA)

3-9: Software Architectures

Room: N264

14:40 **Lock-Free Memory Allocator Without Garbage Collection on Multicore Embedded Devices**
Youngjoong Cho (Sungkyunkwan University, Korea); Dongwoo Lee (Sungkyunkwan University, Korea);
Hyung Kook Jun (Electronics and Telecommunications Research Institute, Korea); Young Ik Eom
(Sungkyunkwan University, Korea)

15:00 **Providing Extra Memory for Virtual Machines by Sharing Compressed Swap Pages**
Jonghee Yun (Korea University & Samsung Electronics, Korea); Chiyoung Lee (Korea University, Korea);
Chuck Yoo (Korea University, Korea)

15:20 **A Sequentializing Device Driver for Optimizing Random Write Performance of eSSD**
Jaesoo Lee (TheAIO Co. Ltd., Korea); Heegyu Kim (TheAIO Co. Ltd., Korea); Heechul Kim (TheAIO Co. Ltd., Korea);
Jungkeun Park (Konkuk University, Korea); Minsoo Ryu (Hanyang University, Korea)

15:40 **Performance Improvement with Zero Copy Technique on FUSE-based Consumer Devices**
Junsup Song (Sungkyunkwan University, Korea); Dongkun Shin (Sungkyunkwan University, Korea)

16:00 **blueRT/OS - A Memory and Energy Optimized Real-Time Operating System**
Carsten Gremzow (University of Wuppertal, Germany); Matthias Menge (Hochschule für Technik und Wirtschaft, Germany)

**TUT06: TUTORIAL: Nonintrusive Appliance Load Monitoring - Opportunities and Challenges (Michael Zeifman)**

Room: N258

Title "Nonintrusive Appliance Load Monitoring - Opportunities and Challenges"

Abstract:
Non-Intrusive Appliance Load Monitoring (NIALM) refers to a system that estimates electricity consumption of individual appliances using single-point sensing and various disaggregation algorithms. The renewed interest in NIALM in residential setting is due to the wide deployment of smart meters that could be used as the sensors and continued progress in digital computing, sensing and networking. While the original NIALM method required professional installation, modern NIALM prototypes are essentially plug-and-play systems that reside on the cloud or mobile platforms. With estimated penetration of 5-10%, the quickly maturing NIALM technology will bring to the market dedicated consumer electronics devices, mobile applications and even smart home components. This tutorial will review the current state of the art in NIALM, including sensing methods, computational algorithms, feedback types as well as challenges and hurdles.

16:20 - 17:00

**Break**

Room: Hall Area

**P03: Poster Session 3: Entertainment & Services Technology, RF Wireless & Network**
StreamMe: Me-Centric Multimedia Streaming System with Clouds, P2P and Smartphones
Dongmahn Seo (Korea Institute of Science and Technology, Korea); Suhyun Kim (Korea Institute of Science and Technology, Korea); Gyuwon Song (Korea Institute of Science and Technology & University of Science and Technology, Korea); Seung-gil Hong (Korea Institute of Science and Technology, Korea)

Using Location to Infer User Contextual Information: a Case Study on Pervasive Advertising
Frederico Bublitz (State University of Paraiba, Brazil); Leonardo Soares (Federal University of Campina Grande, Brazil); Hyggo Almeida (Federal University of Campina Grande, Brazil); Saulo O. D. Luiz (Universidade Federal de Campina Grande - UFCG, Brazil); Angelo Perkusich (Federal University of Campina Grande, Brazil)

Ultra-Fast Updating Methodology of Electronic Program Guide (EPG) for Terrestrial-DMB Platform
Taikeyeong Jeong (Myongji University, USA)

Efficient Implementation of Enhanced Min-Sum Algorithm for DVB-S2 LDPC Decoder
Sung Ik Park (Electronics and Telecommunications Research Institute (ETRI), Korea); Heung Mook Kim (ETRI, Korea); Jeongchang Kim (Korea Maritime University, Korea)

Improvement on a Block-Serial Fully-Overlapped QC-LDPC Decoder for IEEE 802.11n
Chu Yu (National Ilan University, Taiwan); Bor-Shing Lin (National Taipei University, Taiwan); Po-Hsun Cheng (National Kaohsiung Normal University, Taiwan); Sao-Jie Chen (National Taiwan University, Taiwan)

Development of Device-to-Device Communication in LTE-Advanced System
Mi-Jeong Yang (ETRI, Korea); KwangRyul Jung (ETRI, Korea); S Lim (ETRI, Korea); Jaewook Shin (ETRI, Korea)

TV Band Device for TV White Space Field Trial
Kyu-Min Kang (ETRI, Korea); Byung Jang Jeong (ETRI, Korea)

Implementation and Evaluation of Hierarchical Modulation Based T-DMB Transmission System
Byungjun Bae (Electronics and Telecommunications Research Institute, Korea); Hun-Hee Lee (Electronics and Telecommunications Research Institute, Korea); YoungSu Kim (Electronics and Telecommunications Research Institute, Korea); Yun-Jeong Song (Electronics and Telecommunications Research Institute, Korea); Hyoungsoo Lim (Electronics and Telecommunications Research Institute (ETRI), Korea)

Perceptual QoE Based Resource Allocation for Mobile 3D Video Communications
Emad Danish (University of Surrey, United Kingdom); Anil Fernando (Center for Communications Research, University of Surrey, United Kingdom); Mazin Alshamrani (University of Surrey, United Kingdom); Ahmet Kondoz (University of Surrey, United Kingdom)

Content Aware Resource Allocation in OFDM Systems for Energy Efficient Video Transmission
Emad Danish (University of Surrey, United Kingdom); Demuni De Silva (University of Surrey, United Kingdom); Anil Fernando (Center for Communications Research, University of Surrey, United Kingdom); Chamitha de Alwis (University of Surrey, United Kingdom); Ahmet Kondoz (University of Surrey, United Kingdom)

OpenMP and GPU Based Software DVB-T Receiver Design
Kyu-Hyung Lee (Hongik University, Korea); Seo Weon Heo (Hongik University, Korea)

Extending Coverage of Sensor Networks by Wiring Sensor Tags
Wei Ding (New York Institute of Technology, USA); Ricardo Cabret (New York Institute of Technology, USA)

Home Localization System for Misplaced Objects
Son Huynh (Auckland University of Technology, New Zealand); Dave Parry (Auckland University of Technology & School of Computing, New Zealand); Acm Fong (Auckland University of Technology, New Zealand); Je Tung (Tsinghua University, P.R. China)

Diagnostic CWMP Client for Set-Top Box Devices
Milan Z. Bjelica (University of Novi Sad & iWedia, Serbia); Istvan Papp (University of Novi Sad, Serbia); Nikola Teslic (University of Novi Sad, Serbia)

Network Coding-aware Multicast Optimization in Multi-hop Wireless Networks
Jinchul Choi (Electronics and Telecommunications Research Institute, Korea); HyoChan Bang (ETRI, Korea); Chae-Woo Lee (Ajou University, Korea)

An Efficient and Simple Key Distribution Scheme for Smart Environments
Pardeep Kumar (University of Oulu, Finland); Mangal Sain (Dongseo University, Korea); Mika Ylianttila (University of Oulu, Finland); Andrei Gurtov (Aalto University & Department of Computer Science and Engineering, Finland)

On the Multicast of Delay Sensitive Data in Erasure Networks Using Practical Network Coding
Chamitha de Alwis (University of Surrey, United Kingdom); H Kodikara Arachchi (University of Surrey, United Kingdom); Anil Fernando (Center for Communications Research, University of Surrey, United Kingdom); Varuna De Silva (University of Surrey, United Kingdom); Emad Danish (University of Surrey, United Kingdom); Ahmet Kondoz (University of Surrey, United Kingdom)

17:00 - 18:20

3-10: Software Based Systems

3-10: Software Based Systems
A Generic C++ Toolkit for the Development of Real-Time-Capable Software Defined Radio Applications
Jan Zoellner (TU Braunschweig, Germany); Joerg Robert (Technische Universität Braunschweig, Germany); Daniel Rother (TU Braunschweig, Germany); Mariem Slimani (TU Braunschweig, Germany)

VLC-based Indoor Positioning System with Tracking Capability Using Kalman and Particle Filters
Divya Ganti (Pennsylvania State University, USA); Weizhi Zhang (The Pennsylvania State University, USA); Mohsen Kavehrad (The Pennsylvania State University -- University Park, USA)

Software-based Giga-bit WLAN Platform
Ho Yang (Samsung Advanced Institute of Technology, Korea); Jaewook Shim (Samsung Electronics. Co., Ltd., Korea); Jihoon Bang (Samsung Advanced Institute of Technology (SAIT), Korea); Yeonbok Lee (Samsung Advanced Institute of Technology (SAIT), Korea)

Lookup Table-Based Low-Power Implementation of Multi-Channel Filters for Software Defined Radio
Subhendu Kumar Sahoo (B.I.T.S., Pilani, India); Pramod Meher (A-STAR, Singapore)

Scene Analysis Assisting for AWB Using Binary Decision Trees and Average Image Metrics
Konstantin Sofeikov (University of Leicester, United Kingdom); Ilya Romanenko (Loughborough University & Apical Ltd, United Kingdom); Ivan Tyukin (University of Leicester, United Kingdom); Alexander Gorban (University of Leicester, United Kingdom)

Image Segmentation Using Linked Mean-Shift Vectors for SIMD Architecture
HanJoo Cho (POSTECH, Korea); Sung In Cho (Pohang University of Science and Technology, Korea); Young Hwan Kim (Pohang University of Science and Technology, Korea)

Automatic Video Segmentation and Object Tracking with Real-Time RGB-D Data
I-Kuei Chen (National Taiwan University, Taiwan); Szu-Lu Hsu (National Taiwan University, Taiwan); Chung-Yu Chi (National Taiwan University, Taiwan); Liang-Gee Chen (DSP/IC Design Lab., National Taiwan University, Taiwan)

High-quality Region-based Foreground Segmentation Using a Spatial Grid of SVM Classifiers
Xiaohan Zhang (Beijing University of Posts and Telecommunications, P.R. China); Carlos R. del-Blanco (Universidad Politécnica de Madrid, Spain); Carlos Cuevas (Universidad Politécnica de Madrid, Spain); Fernando Jaureguizar (Universidad Politécnica de Madrid, Spain); Narciso García (Universidad Politécnica de Madrid, Spain)

Seeded Region Growing on Multi-Core System
Sangheon Lee (SAMSUNG Electronics, Korea); Yeon-Gon Cho (Samsung Advanced Institute of Technology, Korea); Soojuung Ryu (Samsung Advanced Institute of Technology, Korea); Yeong Gil Shin (Seoul National University, Korea); Byeonghun Lee (Sungkyunkwan University, Korea)

CAVLC Codewords Substitution for H.264/AVC Video Data Hiding
Yih-Chuan Lin (National Formosa University, Taiwan); I-Fong Hsu (National Formosa University, Taiwan)

JTS-Based Static Branch Prediction
Taisong Jin (Samsung Advanced Institute of Technology, Korea); Jinseok Lee (SAMSUNG, Korea); Minwook Ahn (Samsung Advanced Institute of Technology, Korea); Yoonseo Choi (SAIT, Korea); Do-Hyung Kim (Samsung Electronics, Korea); Shihwa Lee (SAIT Samsung Electronics, Korea)

Conference Party (free, ticket required): The Art of Gaming with food and drink
LVH Hotel (Club Oasis Area)

Monday, January 13
08:30 - 09:00
**Breakfast**

Room: N257/259/261

**09:00 - 10:00**

**Keynote: Next Generation Mobility - Is Standardization a Help or a Hindrance?. Stephen Kirk (UL WiSE)**

Room: N257/259/261

Title: "Next Generation Mobility - Is Standardization a Help or a Hindrance?"

Abstract
The increasing sophistication of mobile applications means that the smart phone is becoming a universal convergence device, giving users access to a far wider range of services than would have seemed possible only a few years ago. A significant area of development for next generation mobility is the use of the smartphone for transactional activities; such as m-payments, e-ticketing and the transfer of personal records. Once money and personal information are involved, users rightly demand a much higher level of reliability and security. Industry standardization programs are key enablers of Next Generation Mobility. Not only does this standardization allow manufacturers and application developers to gain the benefits of scale; it also helps to underpin user confidence in the new services that are being deployed. However, we live in a fast moving world where security threats and user requirements are evolving rapidly; if we are to maintain user confidence, we need to ensure that our standardization processes also evolve and become increasingly agile.

**10:00 - 11:20**

**Special Session: International Best Paper Show Case 2013 (Narisa Chu)**

Room: N258

ICCE 2013 - Mr. Dave Donghun Kim, Purdue University, USA
"A Robust Human Pointing Location Estimation Using 3D Hand and Face Poses with RGB-D Sensor"
ISCE 2013 - Ms. Dini Nuzulia Rahmah, National Taiwan University of Science and Technology, Republic of China
"Photo Magician: Controlling Point of Focus and Depth of Field on an All-Focused Image"
ICCE-Berlin 2013 - Ms. Rana Hesham Abdelmonem Ahmed, Institute of Telecommunications, University of Stuttgart, Germany
"Enhanced Blind Maximum Ratio Combining Using Channel Tap Masking for Broadcasting Applications."
GCCE 2013 - Mr. Hiroaki Kurabayashi, Shinshu University, Japan (not presenting)
"Development of Dynamic Transaural Reproduction System using Non-contact Head Tracking"
GHTCE 2013 - Ms. Chongya Ma, Institute of Computing Technology, Chinese Academy of Sciences, Peoples Republic of China (not presenting)
"Virtual Machine Power Metering and Its Applications"

**4-1: Rendering and Display for Consumer Applications**

Room: N260

10:00 **3D Stereoscopic Game Development Technique for Smart TVs**
Laisa C. P. Costa (University of Sao Paulo & LSI-TEC, Brazil); Ana Grasielle Correa (Polytechnical School of University of Sao Paulo, Brazil); Marcelo José (University of Sao Paulo, Brazil); Erich Lotto (University of Sao Paulo, Brazil); Alexandre Martinazzo (University of Sao Paulo, Brazil); Leandro Biazon (University of Sao Paulo, Brazil); Irene Ficherman (LSI-TEC, Brazil); Mario Nagamura (LSI-TEC, Brazil); Roseli Lopes (Polytechnical School of University of Sao Paulo, Brazil); Marcelo K Zuffo (University of Sao Paulo, Brazil)

10:20 **Real-time Photorealistic Rendering for Mobile Devices**
Inwoo Ha (Samsung Advanced Institute of Technology, Korea); Minsu Ahn (Samsung Advanced Institute of Technology, Korea); Hyong-Euk Lee (Advanced Media Lab, Samsung Advanced Institute of Technology & Samsung Electronics, Korea)

10:40 **Just-In-Time Shader Program Generation for Fixed Function Graphics Pipeline Emulation**
Nakhoon Baek (Kyungpook National University & Mobile Graphics Inc., Korea)

11:00 **On-the-fly Fashion Photograph Recommendation System with Robust Face Shape Features**
Wan-Yu Chen (National Taiwan University & National Taiwan University, Taiwan); Jia-Lin Chen (National Taiwan University, Taiwan)
4-2: Display

Room: N262

10:00 An OLED Driving Currents Compensation Method with a CCD Camera
   Jinkyu Kim (R&D Center, LG Display, Korea); Wonyeol Lee (R&D Center, LG Display, Korea); Jeonghoon Seo
   (R&D Center, LG Display, Korea); EuiYeol Oh (LG Display, Korea)
10:20 The Optimal Color Temperature of Smartphone Display Under Various Illuminant Conditions
   Kyungah Choi (KAIST, Korea); Hyeon-Jeong Suk (KAIST, Korea)
10:40 Dynamics of Luminance Contrast for Comfortable Reading on Smartphone Display
   Nooree Na (KAIST, Korea); Jiho Jang (KAIST, Korea); Hyeon-Jeong Suk (KAIST, Korea)
11:00 A Multiple Terminal Synchronous Display Method for Ultra-High Resolution Display Systems
   Junshiro Kanda (Mitsubishi Electric Corporation & Information Technology R&D Center, Japan); Yasunori
   Tsubaki (Mitsubishi Electric Corporation, Japan); Hiroshi Yoshida (Mitsubishi Electric Corporation, Japan);
   Shin Miura (Mitsubishi Electric Corporation, Japan)

4-3: Enabling Technology: Gesture

Room: N264

10:00 Holo-Haptics: Haptic Interaction with a See-Through 3D Display
   Seungju Han (Samsung Electronics, Korea); Joonah Park (Samsung Advanced Institute of Technology, Korea)
10:20 Improved Pupil Center Localization Method for Eye-Gaze Tracking-Based Human-Device Interaction
   Kang-A Choi (Korea University, Korea); Seung-Jin Baek (Korea University, Korea); Chunfei Ma (Korea University,
   Korea); Seung Park (Korea University, Korea); Sung-Jea Ko (Korea University, Korea)
10:40 Real Time Message Composition Through Head Movements on Portable Android Devices
   Laura Montanini (Università Politecnica delle Marche, Italy); Enea Cippitelli (Università Politecnica delle
   Marche, Italy); Ennio Gambi (Università Politecnica delle Marche, Italy); Susanna Spinsante (Università
   Politecnica delle Marche & ArielAB Srl, Italy)
11:00 Robust Finger Contact Detection with Majority Quadrant Search for Interactive Tabletop Displays
   Nam-Joon Kim (Samsung Electronics, Korea); Sungjoo Suh (Samsung Electronics, Korea); Changkyu Choi
   (Samsung Electronics, Korea)

11:20 - 11:40

Break

Room: Hall Area

11:40 - 13:20

4-4: Audio Processing

Room: N260

11:40 Reducing the Standby Power Consumption of a Home Audio System
   Cheng-Hung Tsai (National Taiwan University of Science and Technology, Taiwan); Y. W. Bai (Fu Jen
   Catholic University, Taiwan); Ming-Bo Lin (National Taiwan University of Science and Technology, Taiwan);
   Lin Yen Wen (FU JEN CATHOLIC University, Taiwan); Po-Sen Hsu (Fu Jen University, Taiwan); Roger Jia
   Rong Jhang (Fu Jen Catholic University, Taiwan)
12:00 Audio Restoration Based on Multi-Band Spectral Subtraction and Missing Data Imputation
   Kwang Myung Jeon (Gwangju Institute of Science and Technology (GIST), Korea); Nam In Park (Gwangju
   Institute of Science and Technology (GIST), Korea); Dong Yun Lee (Gwangju Institute of Science and
   Technology, Korea); Hong Kook Kim (Gwangju Institute of Science and Technology (GIST), Korea)
12:20 Design Space Exploration of Hardware Architectures for Content Based Music Classification
   Ingo Schmädecke (Leibniz Universität Hannover, Germany); Holger Blume (Leibniz Universität Hannover,
   Germany)
12:40 Audio Pre-Processing Models for Building Structural Sound Transmission Mitigation
   Fangyu Ke (University of Rochester, USA); Cheng Shu (University of Rochester, USA); Yuxiang Chen
   (University of Toledo, USA); Gang Ren (University of Rochester, USA); Mark Bocko (University of Rochester,
   USA)
13:00 A Tapping-Noise Suppressor with Magnitude-Weighted Phase-Based Detection for Smartphones
4-5: Video Quality and Performance Enhancement

Room: N262

11:40 **An Efficient Recording Method for Video Recorders Using the Video Signature Tools**
Mariko Tsurusaki (Mitsubishi Electric Corporation, Japan); Daiki Kudo (Mitsubishi Electric Corporation, Japan); Hironobu Abe (Mitsubishi Electric Corporation, Japan); Hiroyumi Nishikawa (Mitsubishi Electric Corporation, Japan)

12:00 **An Effective Image Color Balancing Scheme for HD-to-UHD Conversion**
Yong-Ho Kim (Chung-Ang University, Korea); Sangkeun Lee (Chung-Ang University, Korea)

12:20 **Post Processing Algorithm for Reduction of Blocking Artifact in HDTV**
Ramesh Lama (Choosun univ., Korea); Moo-Rak Choi (LG Electronics, Korea); Jae-Young Pyun (Choosun University & Dept. of Information and Communication Engineering, Korea); Goo-Rak Kwon (Choosun University, Korea)

12:40 **Spatial-Temporal Video Enhancement Using Super-Resolution From a Multi-Camera System**
Eduardo Quevedo (Oceanic Platform of the Canary Islands, Spain); Jesus de la Cruz Estevez (University of Las Palmas de Gran Canaria, Spain); Gustavo Marrero Callico (University of Las Palmas de Gran Canaria & Research Institute for Applied Microelectronics, Spain); Felix B. Tobajas (University of Las Palmas de Gran Canaria (ULPGC), Spain); Roberto Sarmiento (University of Las Palmas de Gran Canaria, Spain)

4-6: Energy Management

Room: N264

11:40 **Degradation Diagnosis System of Photovoltaic Panels with Mobile Application**
Beomseok Lee (Chung-Ang University, Korea); Myeong-in Choi (Chung-Ang University, Korea); Byeongkwan Kang (Chung-Ang University, Korea); Lee Won Park (Northwestern University, USA); Sehyun Park (Chung-Ang University, Korea)

12:00 **PLC-based Photovoltaic System Management for Smart Home Energy Management System**
Jinsoo Han (ETRI, Korea); Chang-Sic Choi (ETRI, Korea); Wan-Ki Park (ETRI, Korea); Il-Woo Lee (ETRI, Korea); Sang-Ha Kim (Chungnam National University, Korea)

12:20 **Smart Home Energy Management System Including Renewable Energy Based on ZigBee and PLC**
Jinsoo Han (ETRI, Korea); Chang-Sic Choi (ETRI, Korea); Wan-Ki Park (ETRI, Korea); Il-Woo Lee (ETRI, Korea); Sang-Ha Kim (Chungnam National University, Korea)

12:40 **A Linux Implementation of the Energy-based Fair Queuing Algorithm on an ARM-based Embedded System**
Jianguo Wei (Universidad Politécnica de Madrid, Spain); Eduardo Juarez (Universidad Politécnica de Madrid, Spain); Matias J Garrido (Universidad Politécnica de Madrid, Spain); Fernando Pescador (Universidad Politécnica de Madrid, Spain)

13:00 **Design and Implementation of Intelligent Energy Storage Service Model for Peak Load Shaving**
Byeongkwan Kang (Chung-Ang University, Korea); Hosub Yoon (Chung-Ang University, Korea); Sunghoi Park (Chung-Ang University, Korea); Byunghoon Lee (Chung-Ang University, Korea); Sehyun Park (Chung-Ang University, Korea)

13:20 - 14:40

**Luncheon Keynote: Mobile devices for a better health. Johannes Clauss (TU Munich)**

Room: N257/259/261

Title: "Mobile devices for a better health"

Abstract:
Mobile microelectronic devices has changed our daily lives substantially within the past 50 years. Countless mobile devices in everyday life are used by today's modern societies. While this trend is extremely present in the world of consumer electronics, these new possibilities have not been introduced yet, in the area of healthcare with the same pace. However, mobility will be one of the key features of tomorrow's healthcare devices, as the aging
population strives to live independently at home and enjoy individual mobility at the same time. This keynote shows advances in mobile diagnostic devices and telematic healthcare systems. An emphasis is put on mobile devices which assist patients and medical staff with chronic diseases like cardiovascular syndrome. These systems have a high potential for innovative improvements and better transparency within the healthcare system. Further, safety aspects for mobile devices, like mobile phones, smart watches or tablet computers, are discussed as they are rather designated for consumer use and do mainly not meet the medical safety requirements. Nevertheless this key feature will play an important role for the spreading of mobile consumer devices into healthcare.

14:40 - 16:20

4-7: Video Content Delivery and Recording

Room: N260

14:40 Simulation of Digital Video Recording to Maximize Solid-State Disk Lifetime
Samuel Russ (University of South Alabama, USA); Tho Ha (University of South Alabama, USA); Jonathan Shapiro (University of South Alabama, USA)

15:00 High Resolution Video Streaming Method by Cloud and DASH
Dahee Won (Kyunghee University & MediaNetwork team / Media Lab., Korea); Yongwoo Cho (Kyunghee University & Media Lab, Korea); Kyungmo Park (Samsung Electronics, Korea); Doug Young Suh (Kyunghee University, Korea)

15:20 C-DVR: Secure Cloud Based DVR Framework Based on Personal Virtualization
Hunmin Kim (Hanyang University, Korea); Junggab Son (Hanyang University, Korea); Rasheed Hussain (Hanyang University & Information Security and Privacy Lab, Korea); Heekuck Oh (Hanyang University, Korea)

15:40 Track Error Detection System with Dual Phase Difference for Super-Resolution Optical ROM Disc
Kenya Nakai (Mitsubishi Electric Corporation & Advanced Technology R&D Center, Japan); Masayuki Ohmaki (Mitsubishi Electric Corporation, Japan); Nobuo Takeshita (Mitsubishi Electric Corporation, Japan); Masahisa Shinoda (Mitsubishi Electric Corporation, Japan); Takayuki Shima (National Institute of Advanced Industrial Science and Technology, Japan)

16:00 Stable Matching with Ties for Cloud-assisted Smart TV Services
Gyuyeong Kim (Korea University, Korea); Wonjun Lee (Korea University, Korea)

4-8: Human Device Interaction

Room: N262

14:40 Head Pose Estimation Using a Coplanar Face Model for Human Computer Interaction
Jin-Bum Kim (Sogang University, Korea); Hong-In Kim (Sogang University, Korea); Rae-Hong Park (Sogang University, Korea)

15:00 Robust Visual Voice Activity Detection Using Chaos Theory Under Illumination Varying Environment
Taeyup Song (Korea University, Korea); Kyungsun Lee (Korea University, Korea); Hanseok Ko (Korea University, Korea)

15:20 Deep Learning for Real-Time Robust Facial Expression Recognition on a Smartphone
Inchul Song (Samsung Advanced Institute of Technology, Korea); Hyun-Jun Kim (Samsung Advanced Institute of Technology & Samsung Electronics, Korea); Paul B. Jeon (Samsung Advanced Institute of Technology, Korea)

15:40 A New Iris Circle Localization Method Using Multi-Directional Gradient Filters for Gaze Control
Hong-In Kim (Sogang University, Korea); Jin-Bum Kim (Sogang University, Korea); Rae-Hong Park (Sogang University, Korea)

16:00 Fatigue and Emotions Driven Products: Assessing Safety and Performance Using Mobile Devices
Taciana Rached (Federal University of Campina Grande, Brazil); Flavio Torres Filho (Universidade Federal de Campina Grande, Brazil); Yuska Aguiar (Universidade Federal da Paraíba, Brazil); Maria Vieira (Federal University of Campina Grande & CEEI, Brazil); Angelo Perkusich (Federal University of Campina Grande, Brazil)

4-9: Video Coding and Distribution

Room: N264

14:40 Video Quality Assessment in Video Streaming Services Considering User Preference for Video Content
Demostenes Zegarra Rodriguez (University of Sao Paulo & Nokia Technology Institute, Brazil); Renata Rosa
15:00 A Downloadable Conditional Access System for Satellite Broadcasting
Yusei Nishimoto (NHK, Japan)

15:20 Quality-Optimization Algorithm Based on Stochastic Dynamic Programming for MPEG DASH Video Streaming
Sergio García Lobo (Universidad Politécnica de Madrid, Spain); Julián Cabrera (Universidad Politécnica de Madrid, Spain); Narciso García (Universidad Politécnica de Madrid, Spain)

15:40 Adaptive Iterative Decoding of MISO-BICM for DVB-T2
Ahmad A.Aziz Badawi El-Banna (Egypt-Japan University of Science and Technology & Osaka University, Japan); Ahmed Emran (Egypt-Japan University of Science and Technology, Egypt); Maha Elsabrouty (Egypt Japan University for Science and Technology, Egypt); Adel Abdel Rahman (Egypt-Japan University of Science & Technology, Egypt)

16:00 Hierarchical Control Structure for Provisioning N-Screen Services in Mobile Operator Network
Ghulam Sarwar (Korea Aerospace University, Korea); Farman Ullah (Korea Aerospace University, Korea); Sung Chang Lee (Korea Aerospace University, Korea)