

2014 IEEE International Symposium on Broadband Multimedia Systems and Broadcasting

(BMSB 2014)

**Beijing, China
25 – 27 June 2014**



IEEE Catalog Number: CFP14BRO-POD
ISBN: 978-1-4799-1652-8

BMSB 2014

Detailed Program

Parallel Session 1, 2, 3

Wednesday 25th June 14:00-15:40

Parallel Session 1 01. Video Processing and Quality Room 305 A+B Chair: Wenjun Zhang, Marcelo Sampaio de Alencar		Parallel Session 2 02. Networking performance and management Room 305 C+D Chair: Chih-Peng Li, Feng-Kui Gong	
1	Using Structural Degradation and Parallax for Reduced-reference Quality Assessment of 3D Images Qi Xu, Ke Gu, Min Liu and Guangtao Zhai	26	Performance Evaluation of VoIP Broadcasting over LTE for varying Speeds and Distances of Mobile Nodes Junghwan Kim, Quamar Niyaz and Ahmad Y Javaid
7	No Reference Objective Quality Metric for Stereoscopic 3D Video Yi Han, Zhenhui Yuan, Gabriel-Miro Muntean	31	Interference Management in LTE Co-Channel Femtocells John Cosmas, Hamed Al-Raweshidy, Sinan Khwandah
13	A Novel Methodology for Mapping Objective Video Quality Metrics to the Subjective MOS Scale Arghir-Nicolae Moldovan, Ioana Ghergulescu, and Cristina Hava Muntean	36	Balanced Uplink Scheduling for Dedicated Return Channel of Future Broadcast TV Weifeng Zhong, Xiaolu Lu, Lianghui Ding, Feng Yang, Dazhi He, Yunfeng Guan
20	Comfort Assessment of Border Effects in Stereoscopic Images Jun Zhou, Ye Bi, Jianyu Chen, Qiangbin Chen, and Yi Qin	42	ABI: A Mechanism for Increasing Video Delivery in Multi-Radio Wireless Mesh Networks Adriana Hava , Gabriel-Miro Munteany and John Murphy

Parallel Session 3 03. Signal Processing channel estimation/equalization Room 305 E Chair: Tao Jiang, Greg Best	
48	Joint Channel and Doppler Shift Estimation in TDS-OFDM Using Frequency Sensitive Set Jinxing Hao, Jintao Wang ¹ , Jian Song
52	Application of DFT-Based Channel Estimation for Accurate Signal Cancellation in Cloud-Txn Multi-Layer Broadcasting System

BMSB 2014

	Liang Zhang, Yiyang Wu, Wei Li; Pablo Angueira, Jon Montalban, Manuel Velez; Heung Mook Kim, Sung-Ik Park
58	Unbiased Carrier Frequency Offset Estimation Algorithm for TDS-OFDM Systems Hai Lin, Chao Zhang, and Changyong Pan
63	MMSE-Based Equalization and ICI Mitigation Scheme for OFDM System Over Doubly Selective Channels Zhecheng An, Jun Wang, and Su Huang

Parallel Session 4, 5, 6

Wednesday 25th June 15:55-17:35

Parallel Session 4 04. Video Processing and Quality Room 305 A+B Chair: Byeungwoo Jeon, Bill Zou		Parallel Session 5 05. Networking contain transmission Room 305 C+D Chair: Junghwan Kim, Dazhi He	
67	Using JPEG and JPEG2000 Compressions for Fast Image Quality Metrics Based on Free Energy Theory Ke Gu, Guangtao Zhai, Xiaokang Yang, and Wenjun Zhang	86	Network Reputation-based Stereoscopic 3D Video Delivery in Heterogeneous Networks Ting Bi, Zhenhui Yuan, and Gabriel-Miro Muntean
72	On the Performance of Disparity-based Weighting Technique Applied to 3D Image Quality Assessment Jos'e Vin'cius de Miranda Cardoso, Carlos Danilo Miranda Regisyz, and Marcelo Sampaio de Alencaryz	93	Selective Cooperation in Dual-Hop Cooperative Networks Jyun-Wei Pu, Chih-Peng Li, Tsang-Yi Wang, and Hsueh-Jyh Li
76	VHDL implementation of a No-Reference Video Quality Metric using the Levenberg-Marquardt Method Marcelo de Oliveira, Wyllian Bezerra da Silva, Keiko Ver'onica Ono Fonseca, Alexandre de Almeida Prado Pohl	99	A QoE Friendly Rate Adaptation Method for DASH Yuming Cao, Xiaoquan You, Jia Wang, Li Song
81	A DASH-aware Performance	105	A Rotate-Forward Relaying Protocol

BMSB 2014

	Oriented Adaptation Agent Lejla Rovcanin and Gabriel-Miro Muntean		for Relay Node with Own Broadcasting Information Gui-Fang Jiang , Bo Aiy, Guo Liz and Feng-Kui Gong
--	---	--	---

Parallel Session 6 06. Video Processing Room 305 E Chair: Gabriel-Miro Muntean, Guangtao Zhai	
110	3D Frame Synchronization Detection Based on Classified Epipolar Geometry Parameters Jinkai Gao, Jun Zhou, Xiao Gu
116	Real-time virtual view rendering for video communication systems using OpenCL Tobias Lange, Goran Petrovic, Thorsten Herfet
121	Energy-aware Adaptive Multimedia for Game-based E-learning Ioana Ghergulescu, Arghir-Nicolae Moldovan and Cristina Hava Muntean
127	Big Data ‘Fork’: Tensor Product for DCT-II/DST-II/ DFT/HWT Moon Ho Lee, Md. Hashem Ali Khan

Parallel Session 7, 8, 9

Thursday 26th June 09:00-10:40

Parallel Session 7 07. Field trials Room 305 A+B Chair: Marco Breiling, Chao Zhang		Parallel Session 8 08. LDM/Cloud Transmission Room 305 C+D Chair: Yiyang Wu, Jun Wang	
133	Smart Antenna-Aided Indoor Reception of Digital Terrestrial TV Reception: Test & Development Platform Hosein Asjadi	154	Error Propagation in the Cancellation Stage for a Multi-Layer Signal Reception Jon Montalban, Itziar Angulo, Manuel Velez, Pablo Angueira, Cristina Regueiro, Yiyang Wu, Liang Zhang, Wei Li
139	Technology for Next-generation Digital Terrestrial Broadcasting-Field experiments of	159	Cloud Transmission System Performance for Mobile Urban Scenarios in the Field

BMSB 2014

	<p>8K Super Hi-Vision transmission using Dual-polarized MIMO and ultra-multilevel OFDM</p> <p>Susumu Saito, Takuya Shitomi, Shingo Asakura, Tomohiro Saito, and Kazuhiko Shibuya</p>		<p>U. Gil, C. Regueiro, I. Eizmendi, I. Angulo, M. Velez, D. de la Vega, J.L. Ordiales</p>
145	<p>Cloud Transmission System Performance in Portable indoor environments</p> <p>C. Regueiro, U. Gil, I. Fernández, I. Eizmendi, M. Vélez, D. Guerra, I. Peña, D. de la Vega</p>	164	<p>Channel Capacity Distribution of Layer-Division-Multiplexing System for Next Generation Digital Broadcasting Transmission</p> <p>Liang Zhang, Yiyan Wu, Wei Li, Heung Mook Kim, Sung-Ik Park, Pablo Angueira, Jon Montalban, Manuel Velez</p>
150	<p>Field Trials Based Validation of the Suitable Configuration Parameters for Mobile Urban Reception, Using the New Generation Broadcasting Systems</p> <p>I. Fernandez, I. Eizmendi, Jon Montalban, D. Guerra, G. Prieto, I. Landa, U. Gil, M. Velez</p>	170	<p>Multiple-Input Multiple-Output Cloud Transmission for High Data Rate Local Contents Delivery</p> <p>Sungho Jeon, Jae-Shin Han, Hak-Jin Kim, Yuting Tao, Sung Ik Parky, Zungkon Yim , Heung Mook Kimy, and Jong-Soo Seo</p>

<p>Parallel Session 9</p> <p>09. Signal Processing: Preprocessing, spectrum, others</p> <p>Room 305 E</p> <p>Chair: Jian Xiong, Daniel Ansorregui</p>	
175	<p>Simple and Robust Synchronization Sequences for Future Broadcast Systems</p> <p>Daniel Ansorregui, Belkacem Mouhouche and Alain Mourad</p>
181	<p>A New GSC Beamforming Algorithm Based on Double Affine Projection</p> <p>Zehua Liu, Shouhao Wu, Wenxiu Guo, Jie Zhang</p>
185	<p>PIM in Broadcast Transmission Systems</p> <p>Greg Best</p>
192	<p>Novel Adaptive Digital Predistortion Based on the Hybrid Indirect Learning Algorithm</p>

BMSB 2014

F. Zhang, Y. Wang and B. Ai

Parallel Session 10, 11, 12

Thursday 26th June 11:00-12:15

Parallel Session 10 10. Transmission scheme Room 305 A+B Chair: Yue Zhang, Bo Ai		Parallel Session 11 11. Channel Coding Room 305 C+D Chair: Pablo Angueira, Jian Xiong	
196	A Novel Scheme for the Next Generation of Terrestrial Broadcasting on High Speed Railway Yijie Jiang, Jian Xiong, Lin Gui	208	Technologies for the next generation of digital terrestrial television broadcasting -A study on Spatially Coupled LDPC codes- Shingo Asakura, Takuya Shitomi, Susumu Saitou, Tomohiro Saitou, and Kazuhiko Shibuya
201	Improved Transmission Parameter Signaling Scheme utilizing Cross-Correlation Properties of DFT-Spread Chu Sequence Jeong-Min Choi, Hak-Jin Kim, Sung-Ryul Yun, Youngho Oh, and Jong-Soo Seo	212	Variable Min-Sum Decoding Based on Generalized Mutual Information Metric Yin Xu, Dazhi He, Wenjun Zhang
205	Iterative OFDM Receiver with Turbo Equalization and Soft Demapping in Multipath Fading Channels Zhenrui Chen, Jintao Wang and Jian Song	217	Construction of Multi-Rate High Performance QC-LDPC codes with low Implementation Complexity Yue Liu, Kewu Peng

Parallel Session 12 12. IPTV and Mobile TV Room 305 E Chair: John Cosmas, Ce Zhu	
223	A Software Defined Radio based Implementation of the "Tower Overlay over LTE-A+" System Daniel Rother, Stefan Ilsen, Frieder Juretzek
229	A Large-Scale, User-Centric Evaluation of a Commercial Voice-over-IP Application Toon De Pessemier, Luc Martens, Wout Joseph

BMSB 2014

235	Evaluation of MVPN Technologies for China's NGB Backbone Networks Liang Gong, Xiao Hongjiang, Qin Yanlong, Shu Xingyong, Zhou Xi, Peng Jin
-----	--

Parallel Session 13, 14, 15

Thursday 26th June 14:00-15:40

Parallel Session 13 13. Transmission MIMO Room 305 A+B Chair: Jong-Soo Seo, Lin Gui		Parallel Session 14 14. Signal Processing: Preprocessing, spectrum, others Room 305 C+D Chair: Shuji Hirakawa, Chao Zhang	
240	Extended Space Shift Keying Scheme for MIMO Channels Longzhuang He, Jintao Wang, Changyong Pan and Jian Song	256	Low Cost Estimation of IQ imbalance for Direct Conversion Transmitters Wei Li, Yue Zhang, Carsten Maple, Jin Wang, Li-ke Huang, Jian Xiong
244	Near-Optimal Signal Detection with Low Complexity Based on Gauss-Seidel Method for Uplink Large-Scale MIMO Systems Xinyu Gao, Yanjun Han, and Zhaohua Lu	262	Novel Approach to Shape the Spectrum for TDS-OFDM Systems with Cancellation Carriers Wenbo Ding, Fang Yang, Jian Song
248	A downlink group pre-coding scheme for MBMS in Distributed MIMO system Xiangyang Wang, Tao Jiang, Yin Xu	266	When Vehicles Meet TV White Space: A QoS Guaranteed Dynamic Spectrum Access Approach for VANET Jiacheng Chen, Bo Liu, Haibo Zhou, Yiyang Wu, Lin Gui
252	Trade-off in LDPC Coded MIMO Systems with Iterative and Independent Demapping Shuang Chen, Kewu Peng, Tao Cheng	272	Spectrum Sensing for TDS-OFDM Systems in Cognitive Radio Networks Fei Li, Yun Zhang, Lei Zhang, and Tao Jiang

Parallel Session 15 15. Signal Processing channel estimation/equalization Room 305 E Chair: Bo Ai, Heung-Mook Kim	
277	Shifted Sequence Padding TDS-OFDM

BMSB 2014

	Modulation Scheme Yijun Shi, Dazhi He, Yin Xu, Yunfeng Guan, Yao Wang, Wenjun Zhang, and Honggang Yin
282	Adaptive Averaging Channel Estimation for DVB-T2 using Doppler Shift information Spiridon Zettas, Pavlos I. Lazaridis, John Cosmas, Zaharias D. Zaharis, and Stylianos Kasampalis
288	Adaptive Subspace Pursuit Based Channel Estimation Method for TDS-OFDM Systems Xudong Zhu and Jintao Wang
292	Spectrum-Efficiency Parametric Channel Estimation Scheme for Massive MIMO Systems Zhen Gao, Chao Zhang and Zhaocheng Wang

Poster Session

Thursday 26th June 15:55-17:45

BICC Level 3

Chair: Pablo Angueira (Spain) Marcelo de Oliveira (Brazil)
 Jim Kutzner (USA) Bo Liu (China)
 Sung-Ik Park (Korea) David Plets (Belgium)
 Hirokazu Tanaka (Japan) Liang Zhang (Canada)

296	Error Resilience and Concealment for Multiview Video Coding Abdulkareem B. Ibrahim, Abdul H. Sadka
301	On the genetic optimization of APSK constellations for satellite broadcasting Alessio Meloni, Maurizio Murrioni
307	Spectrum-Sensing-Based WiFi Performance Emulator for Experimental Evaluation of Cognitive Solutions David Plets, Mostafa Pakparvar, Kris Vanhecke, Wout Joseph, Luc Martens Department of Information Technology, Ghent
313	Power Budget Analysis of Full Duplex

	Single Feeder-Fiber Wavelength Division Multiplexed Passive Optical Access Networks Yousaf Kha, Muhammad Idrees Afridi, Waheed Ur Rehman, Jahanzeb Khan
319	Radio Resource Allocation in the Converged Networks of CMMB and TD-MBMS Xiaodong Yang
325	Multi-Cell Block Diagonalization Precoding for Multiuser MIMO Broadcast Channel Md. Hashem Ali Khan, Moon Ho Lee, Jin-gyun Chung
331	Blind Image Quality Assessment for Noise Min Liu, Guangtao Zhai, Ke Gu, and

BMSB 2014

	Xiaokang Yang
336	Investigating the PSNR calculation methods for video sequences with source and channel distortions Afshin Taghavi Nasrabadi, Milad Azizpour Shirsavar, Mohammad Ghanbari
340	Simultaneous Dual-Subtitles Exhibition via Spatial Psychovisual Modulation Chunjia Hu, Guangtao Zhai and Zhongpai Gao
344	Low-Latency Dynamic Adaptive Video Streaming Prof. Dr.-Ing. Thorsten Herfet; Dr.-Ing. Manuel Gorius; Mr. Yongtao Shuai
350	A study on 3D Representation of Declarative Content for Web Platform based Hybrid 3DTV Hyun-Jeong Yim, Hee-Jin Lee, Soon-Bum Lim, Heung Mook Kim
352	An Improved Log-spectral Amplitude Estimator Algorithm for Speech Enhancement Yanfen Wang, Shouhao Wu, Wenxiu Guo, Jianhua Ji
358	Self-Organizing Interference Coordination for Future LTE-Advanced Network QoS Improvements Mohammadreza Behjati, John Cosmas
364	Fast AVS to HEVC Transcoding Based on ROI Detection Using Visual Characteristics Rui Luo, Rong Xie, Liang Zhang
370	Multilevel DCT-Based Zerotree Image Coding Kankan Zheng, Liang Zhang, Rong Xie
376	Studying Digital Terrestrial TV coverage

	Pablo Flores Guridi, Andrés Gómez Caram, Agustín Labandera, Gonzalo Marín and María Simon
381	Reaching devices around an HbbTV television Mikel Zorrilla, Iñigo Tamayo, Angel Martin, Sean O’Halpin, Dominique Hazael-Massieux
388	LDPC-RS Two Dimensional Code for the Next Generation Cloud Transmission System Sung Ik Park, Yiyan Wu, Heung Mook Kim, Sunhyoung Kwon, Liang Zhang, Bo Rong, Namho Hur, and Jeongchang Kim
390	Region Based Saliency Detection by Learning Background Information Di Chen, Lianyang Ma, Jun Zhu, Rui Zhang
396	Quaternion Phase Congruency Model for Edge Saliency Map Extraction Zihao Feng, Yi Xu
402	Comparison of Longley-Rice, ITU-R P.1546 and Hata-Davidson propagation models for DVB-T coverage prediction Stylianos Kasampalis, Pavlos I. Lazaridis, Zaharias D. Zaharis, Aristotelis Bizopoulos, Spyridon Zettas, and John Cosmas
406	Private Image Region Protection and Reconstruction Scheme for Cloud-based Video Monitoring System using Transform Domain Wyner-Ziv Video Coding Jongbin Park, Kyung-Won Kim, Jae-Won Moon, Seung-Woo Kum, Jong-Jin Jung, Tae-Beom Lim, Myung-Hyun Yoon, and Byeungwoo Jeon

BMSB 2014

410	<p>Abnormal Crowd Behavior Detection Using Interest Points Yueguo Zhang, Lili Dong, Shenghong Li, Jianhua Li</p>
414	<p>Design of a Bit Interleaver for the High-order Constellation DVB-T2 System Inwoong Kang, Youngmin Kim, Jae Hyun Seo, Heung Mook Kim, Hyoung-Nam Kim</p>
418	<p>Spectrum Auctions for Multimedia Streaming over Mobile Cognitive Radio Networks Junlong Zhu, Changqiao Xu, Jianfeng Guan, Hongke Zhang</p>
423	<p>Analysis on Two Dimensional Block Interleaver for the Cloud Transmission System Sunhyoung Kwon, Sung Ik Park, Yiyan Wu, Jae-young Lee, Heung Mook Kim, Namho Hur, and Jeongchang Kim</p>
426	<p>Frame Structure Design for Wake-up System using DTV Guard Band for Emergency Alerting Kwanwoong Ryu, You-Seok Lee and Heung Mook Kim</p>
429	<p>Flux based pedestrian flow estimation in occluded scene Xiaowei Lu, Hua Yang, Hang Su, Shuang Wu</p>
434	<p>Performance Evaluation of Lower Layer System in Cloud Transmission Jae-young Lee, Jin-Hyuk Song, Sung Ik Park, Heung Mook Kim</p>
437	<p>Adaptive Gap Filler For Digital TV Chrystianne Rocha, Cristiano Akamine, Gunnar Bedicks and Edson Lemos Horta</p>
443	<p>Field Tests of Two-Way Television Audience Measurement System Tunde Aina, Zhang Ye, Dai Zhenzhong,</p>

	Cao Jianghui
449	<p>A Novel single lens stereoscopic 3D camera system for Ultra High-Fidelity UHD broadcasting. Sangil Park, Sunggeun Yoo, Younghwa Lee, Taehwan Lee</p>
453	<p>A Parallel Sampling Scheme for Multi-carrier Communication Systems Tingting Ouyang, Liang Qian, Lianghui Dingy, Feng Yang</p>
459	<p>Low Delay Rate Control for HEVC Zhongzhu Yang, Li Song, Zhengyi Luo, Xiangwen Wang</p>
464	<p>Accurate Channel Estimation Based on Bayesian Compressive Sensing for Next-Generation Wireless Broadcasting Systems Zhenkai Fan & Yanjun Han</p>
469	<p>Power Consumption Model Using Green Policies in Heterogeneous Networks G. Araniti, J. Cosmas , A. Iera, A. Loiacono, A. Molinaro, A. Orsino</p>
474	<p>Energy Efficient Handover Algorithm For Green Radio Networks G. Araniti, J. Cosmas , A. Iera, A. Molinaro, A. Orsino, P. Scopelliti</p>
480	<p>Open Flow over Wireless Networks: Performance Analysis G. Araniti, J. Cosmas , A. Iera, A. Molinaro, R. Morabito, A. Orsino</p>
485	<p>Adopting Multiview Pixel Mapping for Enhancing Holoscopic 3D Scene in Parallax Barriers Based Holoscopic 3D Displays M.R Swash, O. Abdulfatah, E. Alazawi, A. Aggoun, T. Kalganova and J. Cosmas</p>
489	Time-Varying Channel Estimation

BMSB 2014

	Based on Dynamic Compressive Sensing for OFDM Systems Yanjun Han and Zhenkai Fan		Path Usage on Power Consumption and QoS in Adaptive Mobile Video Martin Kennedy and Gabriel-Miro Muntean
494	Lifetime Popularity Prediction for Online Videos Zhiyi Tan, Ya Zhang	513	Restoring the dynamics of clipped audio material by inversion of dynamic range compression Stanislaw Gorlow, Joshua D. Reiss, and Elodie Duru
500	Optimal DVB-T2 Network Planning using Theoretical SFNs Li Caiwei, Telemi Sato, Angueira Pablo, Brugger Roland, Zhang Xiaolin, Morgade Javier, Peña Ivan, Arrinda Amaia	518	System architecture study and characteristic analysis for the intelligent home using Cable TV gateway Yu Ma
506	A Study on the Effect of Transmission Power Adaptation and Multi-hop		

Parallel Session 16, 17, 18

Friday (27th June) 14:00-15:40

Parallel Session 16 16. Video coding Room 305 A+B Chair: John Cosmas, Demin Wang		Parallel Session 17 17. Transmission modulation Room 305 C+D Chair: Pablo Angueira, Jun Wang	
524	Motion Vector Inheritance Method for Fast HEVC Encoding Seungha Yang, Hiuk Jae Shim, and Byeungwoo Jeon	543	Study on Circularly Arranged Non-Uniform Constellations in Dual-polarized MIMO-OFDM Trans Takuya Shitomi, Shingo Asakura, Susumu Saito, Tomohiro Saito, Kazuhiko Shibuya
528	Fast Motion Estimation Methods for HEVC Xufeng Li, Ronggang Wang	547	Improvements of APSK Constellation with Gray Mapping Wenjun Zhang, Yunfeng Guan, Yijun Shi, Dazhi He, Yin Xu, Yao Wang, and Honggang Yin
532	Regional Context Model and Dynamic Huffman Binarization for Adaptive Entropy Coding of Multimedia Jiangming Wu, Wenrui Dai, and	551	Low-Complexity Switched Soft Demapper for Rotated Non-Uniform Constellation DVB-NHG Systems Yuting Tao, Hak-Jin Kim, Sungho Jeon, and Jong-Soo Seo

BMSB 2014

	Hongkai Xiong		
538	Multiple Reference Views for Hole Reduction in DIBR View Synthesis Ce Zhu, Shuai Li	557	When do Rotated Constellations Provide Gains? Marco Breiling, Jan Zöllner, and Jörg Robert

Parallel Session 18 18. Next Generation Broadcasting Room 305 E Chair: Sung-Ik Park, Kewu Peng	
563	3D-Interactive-Depth Generation and Object Segmentation from Holographic Image E. Alazawi, A. Aggoun, J. Cosmas, M.R. Swash, O. Abdulfatah and M. Abbod
568	Television Broadcast Using Unequal Fountain Codes Wei Huang, Feng Yangy, Lianghai Ding, Dazhi He, Wenjun Zhang
574	Human Detection Based on CENTRIST and Scale of Edge Selection Changyou Deng, Hua Yang, Hang Su