2017 20th International Symposium on Wireless Personal **Multimedia Communications** (WPMC 2017)

Bali, Indonesia 17-20 December 2017



IEEE Catalog Number: CFP17WPC-POD

978-1-5386-2769-3

ISBN:

Copyright \odot 2017 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP17WPC-POD

 ISBN (Print-On-Demand):
 978-1-5386-2769-3

 ISBN (Online):
 978-1-5386-2768-6

ISSN: 1347-6890

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400

Fax: (845) 758-2633

E-mail: curran@proceedings.com Web: www.proceedings.com



Table of Contents

ABOUT WPMC 2017	
WELCOME MESSAGE FROM GENERAL CHAIR OF WPMC 2017	
WELCOME MESSAGE FROM PRESIDENT OF NICT	IV
WELCOME MESSAGE FROM CHAIRMAN OF YRP R&D PROMOTION COMMITTEE	ν
WELCOME MESSAGE FROM CO-CHAIR OF WPMC STEERING BOARD	VI
WELCOME MESSAGE FROM CO-CHAIR OF WPMC STEERING BOARD	VII
WELCOME MESSAGE FROM CO-CHAIR OF WPMC STEERING BOARD	VIII
WELCOME MESSAGE FROM TPC CHAIR OF WPMC 2017	IX
PROGRAM AT A GLANCE	x
KEYNOTE SPEAKERS	XII
TUTORIAL SPEAKERS	XVIII
TECHNICAL SESSIONS	xx
PAPERS INDEX	xxxıv
AUTHORS INDEX	xxxvIII
COMMITTEES	XLVI









Papers Index

No	Title	Page number
1	Authentication Mechanism for Network Applications in SDN Environments	1
2	An Image Based Undetectable Steganographic Technique (ImUST)	6
3	Ergodic Secrecy Sum Rate Maximization in Downlink Sparse Code Multiple Access Network	11
4	Enhanced Encryption Model for Sensor Data in Wireless Sensor Network	16
5	Improving Scattered Pilot Channel Estimation by Sector Selection on FDD MIMO/OFDM Systems	22
6	A Comprehensive Study of Universal Time-domain Windowed OFDM-based LTE Downlink System	28
7	LTE Uplink System Based on Universal Time-domain Windowed DFTs-OFDM	35
8	Optimized Adaptive Modulation with Considering Mobile Relay on FSS-OFDM System	41
9	On Throughput Optimization for Coded OFDM with Variable Cyclic Prefix Length	46
10	PAPR Characteristics in Spectrum Suppressed Transmission and Transmission Quality Improvement by Equalization	52
11	Utilization Efficient Game-Theoretical Handover Scheme for Macro-Femtocell Networks	57
12	Improved Common Correlation Matrix Based SMI Algorithm by Channel Estimation Error Minimization with LMS Approach	63
13	Improving Cellular Coverage Through UAVs	68
14	Performance Evaluation of Inter-Cell Interference Coordination with Multiple Interference Pattern Based on Proportional Fair Criteria	74
15	Performance Evaluation of TD-LTE in VHF-band for Large Coverage Public Broadband Communications System	80
16	A Transceiver Design of VHF Band Standardized Broadband Mobile Communications Systems	87
17	Performance Analysis and Hardware Verification of Signal Detection Scheme Using Cyclic Prefix in OFDM	94
18	A UTW-OFDM Without Symbol Overlapping Process for Small Cell Networks	100
19	Performance of Polar Codes with MIMO-OFDM Under Frequency Selective Fading Channel	107
20	Spectral Efficiency Enhancements Utilizing Analog RF Front-end In-Band Interference Cancellation	112
21	Theoretical Analysis of Interference Canceler Using Modified Hermite Polynomials Based Orthogonal Matched Filter for IR-UWB Systems in AWGN and Interference Channel	117
22	Antenna Tilt Optimization Using a Novel QoE Model Based on 3G Radio Measurements	124
23	90-GHz Band Propagation Characteristics in Viaduct Environment for Railway Radiocommunication System Between Train and Trackside	131
24	Radio Channel Characterizations at 2.4 GHz in Mine Shaft Environment	138
25	Time-domain Channel Equalization for Subcarrier Spacing Compressed FDM with SC-MMSE Turbo Equalization Receiver	143
26	Iterative Carrier Frequency Offset Estimation for Faster-than-Nyquist Signaling	150
27	A Distributed-and-Interactive Reporting Scheme for Collective-Sensing in Multi-Band Wireless LAN System	154
28	Multi-mode Tracking of a Group of Mobile Sensors	161







29	Cyclostationary Spectrum Sensing Based Channel Estimation Using Complex Exponential Basis Expansion Model in Cognitive Vehicular Networks	167
30	Implementation of a Multi-hop Network at the University Campus Using an IEEE 802.11af Network	173
31	Parallel Concatenated Systematic Polar Code Based on Soft Successive Cancellation List Decoding	181
32	Performance Evaluation of Rate-Compatible Polar Codes Using Puncturing/Shortening	185
33	Performance Analysis of Physical Layer Security over Different Error Correcting Codes in Wireless Sensor Network	191
34	High-Order Circular QAM Constellation with High LDPC Coding Rate for Phase Noise Channels	196
35	A Study on Matched Filter Banks of P-Phase ZCZ Codes	202
36	Performance Analysis of Fast Optical OFDM for VLC	206
37	Monte Carlo Algorithm for the Evaluation of the Distance Estimation Variance in RSS-Based Visible Light Positioning	212
38	Impact of Wavelength Dependency of LED and Photodiode in Visible Light Positioning	217
39	Behavior of Non-Directed Optical Wireless Channel Considering Receiver Orientation	223
40	Transmission Quality Improvement by LED Back-off Optimization for Visible Light Wireless Communications	229
41	UHD Video Transmission Using Adaptive SHVC in Wireless Networks	234
42	Mobile TV Directed Resource Allocation Scheme for LTE	241
43	Modeling and Analysis of Indoor Coverage Probability for Future 3D Dense Mobile Networks	247
44	CoMP Set Formulation for Downlink Transmission in Dense Small Cell Networks	253
45	Connection Admission Control Strategy for Wireless VoIP Networks Using Different Codecs and/or Codec Mode-sets	258
46	Automotive Pattern Reconfigurable Antennas Concealed in a Chassis Cavity	265
47	Performance Analysis of the Maximum Ratio Transmission Preprocessing for Extended Receive Antenna Shift Keying	271
48	Ultra Wide Band Crescent Antenna with Enhanced Maximum Gain	276
49	A User Cooperation Aided Device-Centric Clustering Approach for Large-Scale Distributed Antenna Systems	280
50	Reduced Complexity Decoder for FDD MIMO Beamforming Systems with Large Antenna Arrays	287
51	Adaptive Forward Link Formation for Terminal Collaborative Reception	292
52	Concept, Design, and Prototype of Shared Base Station Supporting Millimeter Waves for 5G Cellular Networks	297
53	Angle Based Malicious User Detection for Wideband Cognitive Radio Network	304
54	A Weighted Least-Squares Method Using Received Signal Strength Measurements for WLAN Indoor Positioning System	310
55	Theoretical Analysis of BER Performance of OCDMA System Using Compact Matched Filter Bank for an Optical ZCZ Sequence Set	315
56	Investigation About the Paging Resource Allocation in NB-IoT	320
57	A Dynamic Routing Protocol Supporting Mobile Nodes in Wi-SUN FAN Systems	325
58	Wifi Channel Selection Based on Load Criteria	332
59	Dynamic Multi Hop Routing Protocol for Unbalanced Sized Clusters in Wireless Sensor Networks	337









60	Performance Study of Opportunistic Scheduling in Multiuser Cognitive Relay Network	344
61	A Single Node Vehicle Detection System Using an Adaptive Signal Adjustment Technique	349
62	, , , , , ,	354
	A Context-aware QoE-driven Strategy for Adaptive Video Streaming in 5G multi-RAT Environments	
63	Design of Timing Tracker for Quality of Service of Energy Management Based on Dimmable Lighting Design of Satellite Constellation with Inter-satellite Links for Global Communication Using Genetic	361
64	Algorithm	367
65	Spatio-temporal Stochastic Modeling of Heterogeneous Cellular Networks: Security and Delay Analysis	374
66	A Deep Learning Based Handover Mechanism for UAV Networks	380
67	Load Balancing Scheme for Data Center Based on SDN	385
68	HEM: A Hybrid Evolutionary Model for Event Detection in Untrustworthy Sensing	392
69	A Smooth-Trajectory Mobility Model for Airborne Networks	398
70	Wireless Technologies to Assist Search and Localization of Victims of Wide-scale Natural Disasters by Unmanned Aerial Vehicles	404
71	Routing Algorithm Considering Nodes Residual Power to Prolong Ad-Hoc Network Lifetime	411
72	A Study on Latency-guaranteed Multi-hop Wireless Communication System for Control of Robots and Drones	417
73	Human Mobility Prediction Based on A Hierarchical Interest Model	422
74	Naming Scheme Using NLP Machine Learning Method for Network Weather Monitoring System Based on ICN	428
75	Machine Learning Based Subjective Quality Estimation for Video Streaming over Wireless Networks	435
76	Supporting System for Fishery Resource Management Utilizing Convolutional Neural Network	442
77	Feature Selection Based on Network Maximal Correlation	448
78	An Artificial Neural Network-Based Distributed Information-Centric Network Service	453
79	User Grouping with Adaptive Group Number for Massive MIMO Downlink Systems	459
80	Interference Suppression Through Power Allocation for Massive MIMO Systems with Channel Aging	465
81	Digital Beamforming Algorithm for 5G Low-SHF-Band Massive MIMO with Intersite Coordination	470
82	Experimental Evaluation of Digital Beamforming for 5G Multi-Site Massive MIMO	476
83	Performance Analysis and Optimization for Downlink Distributed MIMO Systems	481
84	Power Consumption Analysis for User Cooperation Aided Traffic Forwarding over Frequency Selective Fading Channels	487
85	Performance of DF Incremental Relaying with Energy Harvesting Relays in Underlay CRNs	494
86	A Full-Duplex SWIPT Relaying Protocol Based on Discrete Energy State	500
87	RF Energy Harvesting Based Relays Non-orthogonal AF Vs Dynamic DF	506
88	Robust Beamforming and Power Splitting Ratio Optimization in Cognitive Downlink Multiuser MISO Networks	511
89	A Novel Localization C# Framework for RAN Optimization Using Extreme Programming Methodologies	516
90	Indoor Positionning Through Fingerprinting Technics: How Many Beacons Should Be Deployed and Where?	522



xxxvi





91	A Throughput Study of Grant-Free Multiple Access for Massive Wireless Communications	529
92	Throughput Analysis for String-Topology Full-Duplex Multi-hop Network	535
93	Field Experimental Evaluation of Higher Rank MIMO in Quad-directional UE Antenna Configuration for 5G Radio Access System	542
94	QoS Analysis for WebRTC Videoconferencing on Bandwidth-Limited Network	547
95	Data Aggregation Among Mobile Devices for Upload Traffic Reduction in Crowdsensing Systems	554
96	An Architecture for QoS-aware Service Deployment in Software-Defined IoT Networks	561
97	An In-Network Service System Based on Smart Routers and Edge Devices	568
98	LOS/NLOS Channel Identification Algorithm in VLC-based Indoor Positioning System	575
99	Bayesian Compressive Spectrum Sensing Joint DOA Estimation and Polarization Signal Processing	579
100	Carrier Sense Towards Spectrum Sharing via Control Channel in LTE Systems	585
101	Study of Spectrum Sensing Scheme Using Received Power Within Preamble Signals	592
102	Performance of Physical Cell ID Detection Using PVS Based Transmit Diversity for NB-IoT	598
103	Sparse Chaos Code Multiple Access Scheme Achieving Larger Capacity and Physical Layer Security	604
104	Hardware Demonstration on an Efficient Radio Access for Massive Machine-Type Communication (mMTC)	611
105	Low-Energy Operation Management Scheme Using Superframe Modification for Wireless Grid Network Structures	618
106	Centralized Macrocell Muting at Subchannel Level in LTE Heterogeneous Networks	625
107	Approximated Teletraffic Analysis for the Performance Evaluation of Mobile Cellular Networks with MMPP-2 New Call Arrivals	631
108	A Jammer-Resilient Cognitive Radio Network Using Evolutionary Game Theory	638
109	Approximating Log-Normally Distributed Secondary Service Time by Hyper-Exponential Distribution for the Analytical Performance Evaluation of Cognitive Radio Networks	642







