

2013 International Conference of Information and Communication Technology

(ICoICT 2013)

**Bandung, Indonesia
20 – 22 March 2013**



**IEEE Catalog Number: CFP13ICZ-POD
ISBN: 978-1-4673-4990-1**

Drograa

International Conference on Wireless Communication and Information Technology

Contents Page

Welcome Message	i
Organizing Committees	ii
Technical Program Committees (TPC)	iii
Keynote Speaker 1 : Prof. Dr. Ing. Habil. Thomas Magedanz	x
Keynote Speaker 2 : Prof. Dr.-Ing. Abdelhak M. Zoubir	xii
Keynote Speaker 3 : Prof. Dr. Hikmet Sari	xiv
Author Index	xvi
Table of Content	xxi

Sessions

I Wireless and Sensor Network

<i>Collaborative Spectrum Sensing Using Sequential Detections: Soft Decision Vs. Hard Decision</i> Fiky Suratman (TU Darmstadt, Germany), Adrian Tetz (TU Darmstadt, Germany), Abdelhak M Zoubir (Darmstadt University of Technology, Germany)	1
<i>Comparison and Performance Analysis of AntNet and Distance Vector Routing Protocol in Telecommunication Networks Case Study XYZ Company</i> Abdusy Syarif (University of Haute Alsace, France), Harris Simaremare (Universite de Haute Alsace, France), Pascal Lorenz (University of Haute Alsace, France)	7
<i>DDoS Attack Detection Method and Mitigation Using Pattern of the Flow</i> Ahmad Sanmorino (Universitas Indonesia, Indonesia), Setiadi Yazid (Universitas Indonesia, Indonesia)	12
<i>Extending Lifetime of Heterogenous Wireless Sensor Network Using Relay Node Selection</i> Norah Tuah (Universiti Kebangsaan Malaysia, Malaysia), Mahamod Ismail (Universiti Kebangsaan Malaysia, Malaysia)	17
<i>Implementation of Networked Control Systems Using Programmable Controller Based Ethernet Network</i> Aris Ramadhan (Telkom Institute of Technology, Indonesia), Muhammad Murti (Institut Teknologi Telkom, Indonesia), Leanna Yovita (Telkom Institute of Technology, Indonesia)	22

<i>Performance Comparison of LMS and RLS Adaptive Array on High Speed Train Delivered From High Altitude Platforms</i> Irma Zakia (Institut Teknologi Bandung, Indonesia), Suhartono Tjondronegoro (Institut Teknologi Bandung, Indonesia), Iskandar Iskandar (Institut Teknologi Bandung, Indonesia), Adit Kurniawan (Bandung Institute of Technology, Indonesia)	28
<i>Quality-Supporting Duration for Dual-Hop Vehicle-to-Vehicle Cooperative Communications</i> Dongwoo Kim (Hanyang University, Korea), Yunsung Choi (Hanyang University, Korea)	33

7 Control and Optimization Systems

<i>Sparse Data for Document Clustering</i> Ionia Veritawati (University of Indonesia, Indonesia)	38
<i>Computer Controlled Digital Microscope with Photomicrograph Enhancement</i> Agampodi Dumindu Nayanajith Silva (Sri Lanka Institute of Information Technology, Sri Lanka), Malitha Nayanajith Wijesundara (National University of Singapore, Singapore), Ransalu Senanayake (The Hong Kong University of Science and Technology, Hong Kong)	44
<i>High Speed Filtering for Mutual Privacy Protection in SNS Using Multistage Bloom Filter</i> Yasuhito Utsunomiya (Tokyo University of Technology, Japan), Shin Tezuka (Keio University, Japan), Ryuya Uda (Tokyo University of Technology, Japan)	48
<i>Ideas on Improving the Business-IT Alignment in BPM Enabled by SOA</i> Matej Hertis (University of Ljubljana, Slovenia)	55
<i>Implementation of Analytic Network Process (ANP) and Analytic Hierarchy Process (AHP) Method to Determine Priorities of Roads to Be Repaired At Bogor City Department of Public Works</i> Riza Agustiansyah (IT Telkom Bandung, Indonesia)	61
<i>Log-Value Estimation of Random Variable Following Generalized Gamma Distribution in Wireless Communications</i> YungLan Tseng (National Chiao Tung University, Taiwan), ChingYao Huang (National Chiao Tung U., Taiwan)	67
<i>The Analysis and Implementation of Degree Centrality in Weighted Graph in Social Network Analysis</i> Zudha Rachman (IT Telkom Bandung, Indonesia), Warih Maharani (Institute of Technology Telkom, Indonesia), A Adiwijaya (Telkom Institute of Technology, Indonesia)	72

Skripsi Intelligent Systems

<i>gCLUPS: Graph Clustering Based on Pairwise Similarity</i> Intan Nurma Yulita (Universitas Indonesia, Indonesia), Ito Wasito (University of Indonesia, Indonesia), Mujiono Sadikin (Universitas Indonesia, Indonesia)	77
<i>Fractal Dimension Approach for Clustering of DNA Sequences Based on Internucleotide Distance</i> Mujiono Sadikin (University of Mercu Buana, Indonesia), Ito Wasito (University of Indonesia, Indonesia)	82

<i>Hybrid Ontology Based e - Learning Expert System for Children with Autism</i> Karthika Venkatesan (Centre for Development of Advanced Computing, India), Sindhuja Nelaturu (Centre for Development of Advanced Computing, India), Annie Joyce Vullamparthi (CDAC, India), Sheilaja Rao (National Institute for the Mentally Handicapped, India)	93
<i>A Hybrid Strategy for Improving PSO and Its Application for Self-Tuning PID Controller on Position Control of Ultrasonic Motor</i> Djoewahir Alrijadjis (Yamaguchi University, Japan), Kanya Tanaka (Yamaguchi University, Japan), Shota Nakashima (Yamaguchi University, Japan)	99
<i>A Rainfall Forecasting Using Fuzzy System Based on Genetic Algorithm</i> Fhira Nhita (IT Telkom, Indonesia), A Adiwijaya (Telkom Institute of Technology, Indonesia)	111

CVeW and 7 haraWer FeWbgnition

<i>Analysis of Features Selection for P2P Traffic Detection Using Support Vector Machine</i> Haitham Jamil (Universiti Teknologi Malaysia, Malaysia), Roozbeh Zarei (Universiti Teknologi Malaysia, Malaysia), Muhammad Nadzir Marsono (Universiti Teknologi Malaysia, Malaysia)	116
<i>Combining Pixel Projection, OCR, and Scale Calculation to Perform Graph Feature Extraction</i> Wahyu Pratomo (Telkom Institute of Technology, Indonesia), Hertog Nugroho (Bandung State of Polytechnic, Indonesia)	122
<i>Comparison Between Fingerprint and Winnowing Algorithm to Detect Plagiarism Fraud on Bahasa Indonesia Documents</i> Agung Toto Wibowo (Institut Teknologi Telkom, Indonesia), Kadek Sudarmadi (Institut Teknologi Telkom, Indonesia), Ari Barmawi (Institut Teknologi Telkom, Indonesia)	128
<i>Fire Color Detection Using Color Look Up and Histogram Analysis</i> Tjokorda Agung Budi Wirayuda (Telkom Institute of Technology, Indonesia), Febryanti Sthevanie (Telkom Institute of Technology, Indonesia), Sri Widowati (Telkom Institute of Technology, Indonesia)	134
<i>Object Recognition and Detection by Shape and Color Pattern Recognition Utilizing Artificial Neural Networks</i> Ma. Lourdes Dimaala (Polytechnic University of the Philippines, Philippines), Erica Joanna Franco (Polytechnic University of the Philippines, Philippines), Jerome Paul Cruz (Polytechnic University of the Philippines, Philippines), Laurene Gaile L Francisco (Polytechnic University of the Philippines, Philippines), Argel Bandala (De La Salle University, Philippines), Elmer Dadios (De La Salle University - Manila, Philippines)	140
<i>Requirements Analysis of Android Application Using Activity Theory: A Case Study</i> Nik Azlina Nik Ahmad (Universiti Kuala Lumpur, Malaysia)	145

7 loud TeWhnologm

<i>Community Exchange: Social Software to Support Group Discussion</i> Romiza Md Nor (Universiti Teknologi MARA, Malaysia)	150
---	-----

<i>Enhancing Educational Services Using Cloud Technology</i> Baginda Nan Cenka, NC (Faculty of Computer Science, University of Indonesia, Indonesia), Zainal Hasibuan (Universitas Indonesia, Indonesia)	155
<i>Information Retrieval Experiment on Subjective Words Query Expansion</i> Maleerat Sodanil (Faculty of Information Technology, KMUTNB, Thailand), Hathairat Ketmaneechairat (King Mongkut's University of Technology North Bangkok, Thailand)	161

? nok ledge 6 ased Srstea

<i>Online Shopping Recommender System Using Hybrid Method</i> Ade Romadhony (Institut Teknologi Telkom Bandung, Indonesia)	166
<i>Requirement of Knowledge Centre Based on Web Analysis</i> Ily Amirah Hassannuddin (Universiti Teknologi Malaysia, Malaysia)	170
<i>Mining Food Industry's Multidimensional Data to Produce Association Rules Using Apriori Algorithm as a Basis of Business Strategy</i> Feri Sulianta (Institut Teknologi Telkom, Indonesia), Thee Liong (Institut Teknologi Telkom, Indonesia), Imelda Atastina (Institut Teknologi Telkom, Indonesia)	176

AoVile 7 oa a uniVation =

<i>Channel Estimation for LTE Downlink in High Altitude Platforms (HAPs) Systems</i> Muhammad Reza Kahar Aziz (Japan Advanced Institute of Science and Technology, Japan), Iskandar Iskandar (Institut Teknologi Bandung, Indonesia)	182
<i>Optimal Access Point Switching with Per-Link Threshold Under Nonhomogeneous Bandwidth Allocation</i> Dongwoo Kim (Hanyang University, Korea), Dae-Kyo Jeong (Hanyang University, Korea)	187
<i>Simulation and Analysis of Interference Avoidance Using Fractional Frequency Reuse (FFR) Method in LTE Femtocell</i> Uke Usman (IT Telkom, Indonesia), Budi Prasetya (Telkom Institute of Technology, Indonesia)	192
<i>Identification of Interferers in Het-Net in LTE-A Systems Based on FeICIC with Cell Range Expansion</i> Mir Yasir Umair (Beihang University, P.R. China), Dengkun Xiao (Huawei Technologies Co., Ltd, P.R. China), Dongkai Yang (Beihang University, P.R. China), Fanny Fauzi (Beihang University, P.R. China)	198

: uture KeV

<i>TMT Quantization Table Generation Based on Psychovisual Threshold for Image Compression</i> Ferda Ernawan (Universiti Teknikal Malaysia Melaka, Malaysia), Nur Azman Abu (Universiti Teknikal Malaysia Melaka, Malaysia), Nana Suryana Herman (Universiti Teknikal Malaysia Melaka, Malaysia)	202
<i>Websites Usability Instrument Validation Using Think-Aloud Method</i> Muhammad Aliif (Universiti Teknologi Malaysia, Malaysia)	208

<i>ACTIFIST Adaptive Architecture for Integrated Information System</i> Kusuma Ayu Laksitowening (Institut Teknologi Telkom, Indonesia), Yanuar Firdaus Arie Wibowo (Institut Teknologi Telkom, Indonesia)	213
--	-----

Aultia edia AppliVation

<i>Development Methods for Hybrid Motion Detection (Frame Difference-Automatic Threshold)</i> Tjokorda Agung Budi Wirayuda (Telkom Institute of Technology, Indonesia), Rita Rismala (Telkom Institute of Technology, Indonesia), Febryanti Sthevanie (Telkom Institute of Technology, Indonesia), Kusuma Ayu Laksitowening (Institut Teknologi Telkom, Indonesia)	218
<i>Performance Evaluation of Stack-Protocols, Encapsulation Methods and Video Codecs for Live Video Streaming</i> Afaq Iqbal (National University of Science and Technology, Pakistan), Fahim Arif (National University of Science and Technology, Pakistan), Nasru Minallah (University of Southampton, UK., United Kingdom)	223
<i>Preservation of Gobak Sodor Traditional Games Using Augmented Reality Computer Game Simulation</i> Abas Setiawan (Dian Nuswantoro University, Indonesia), Etika Kartikadarma (Dian Nuswantoro University, Indonesia), Hanny Haryanto (Universitas Dian Nuswantoro Semarang, Indonesia)	235
<i>Real-Time Hand-Tracking on Video Image Based on Palm Geometry</i> Tjokorda Agung Budi Wirayuda (Telkom Institute of Technology, Indonesia), Habbi Adhi (Telkom Institute of Technology, Indonesia), Didik Hari Kuswanto (Telkom Institute of Technology, Indonesia), R Dayawati (Faculty of Informatics Telkom Institute of Technology Indonesia, Indonesia)	241

AoVile 7 oa a uniVation =

<i>Signal Strength-based Adjacency Matrix and Its Eigenvalue in Mobile Robotic Networks</i> Bayu Erfianto (TELKOM Institute of Technology, Indonesia)	247
<i>Performance Evaluation of R-S Coded Cooperative Diversity in Flat Fading Channel: Pairwise Error Probability (PEP)</i> Oluseye Adeleke (Universiti Sains Malaysia, Malaysia), Mohd Fadzli Mohd Salleh (Universiti Sains Malaysia, Malaysia)	253
<i>Implementation of Feature Extraction Based Hand Geometry in Biometric Identification System</i> Tjokorda Agung Budi Wirayuda (Telkom Institute of Technology, Indonesia), Didik Hari Kuswanto (Telkom Institute of Technology, Indonesia), Habbi Adhi (Telkom Institute of Technology, Indonesia), R Dayawati (Faculty of Informatics Telkom Institute of Technology Indonesia, Indonesia)	259

Sa art Serj iVes =

<i>A Bibliometric Analysis on Scientific Production of Geographical Information System (GIS) in Web of Science</i> Ahmad Nadzri Mohamad (Universiti Teknologi MARA, Malaysia)	264
--	-----

<i>A Blind Spectrum Sensing Method for DTV Signal Detection</i> Agus Subekti (Indonesian Institute of Sciences, Indonesia), Sugi Sugihartono (Bandung Institute of Technology, Indonesia), Nana Syambas (Institute of Technology Bandung, Indonesia), Andriyan B. Suksmono (Bandung Institute of Technology, Indonesia)	269
<i>Metamorphic Animation of 3D Fern-like Fractal Images Based on A Family of Transitional 3D IFS Code Approach</i> Tedjo Darmanto (Bandung Institute of Technology, Indonesia), Iping Supriana (Bandung Institute of Technology, Indonesia), Rinaldi Munir (Bandung Institute of Technology, Indonesia)	273
<i>Smart Home System Using Android Application</i> Ridza Ramlee (Universiti Teknikal Malaysia Melaka, Malaysia), Mohd Muzafar Ismail (University Tecnical Malaysia Melaka, Malaysia), Mohd Azlishah Othman (University of Nottingham, United Kingdom), Leong Hong (Universiti Teknikal Malaysia, Melaka, Malaysia), Ranjit Singh (Universiti Teknikal Malaysia Melaka, Malaysia)	277

: uture Betk or_

<i>OLAP Best Solution for Multidimensional Grocery Business Model</i> Angreine Kewo (De La Salle University Manado, Indonesia)	286
<i>Throughput Estimation Model for Uniformly Distributed Femto Base Station Networks</i> YungLan Tseng (National Chiao Tung University, Taiwan), ChingYao Huang (National Chiao Tung U., Taiwan)	298
<i>Storage Area Network Based-on Internet Small Computer Standard Interface Optimization Using Internet Protocol Multipathing</i> Tody Wibowo (Institut Teknologi Telkom, Indonesia), Yudha Purwanto (Institut Teknologi Telkom, Indonesia), Hendra Wiratama (Institut Teknologi Telkom, Indonesia)	303
<i>Perturbation Theory Based on Darboux Transformation on One-Dimensional Dirac Equation in Quantum Computation</i> Agung Trisetyarso (Telkom Institute of Technology, Indonesia)	308

K ireless TeWhnologm

<i>Design and Implementation of Moving Object Tracker for UAV/Rocket Ground Station</i> Joko Suryana (Institut Teknologi Bandung, Indonesia)	311
<i>Design and Realization of Flat Mobile VSAT Antenna for Ku/Ka-band Satellite Communications with Auto-beam Steering Capability</i> Joko Suryana (Institut Teknologi Bandung, Indonesia)	316
<i>Design and Realization of Two Array Triangle Patch of Microstrip Antenna with Gold Plat At Frequency 2400-2450 Mhz for Hexagonal Nanosatellite</i> Wahyu Saputra (ITTelkom Bandung, Indonesia), Budi Prasetya (Telkom Institute of Technology, Indonesia), Yuyu Wahyu (LIPI, Indonesia)	322
<i>Design of Microstrip Antenna for LTE (Long Term Evolution) 700 MHz Applications</i> Dony Sugianto (Universitas Pendidikan Indonesia, Indonesia), Tommi Hariyadi (Universitas Pendidikan Indonesia, Indonesia)	328

<i>Ultra Wideband Planar Triangular Patch Antenna with Slit Ridged Ground Plane</i> Rengga Wasesa (Institut Teknologi Telkom, Indonesia), Bambang Nugroho (Institut Teknologi Telkom, Indonesia), Yuyu Wahyu (LIPI, Indonesia)	' ' & 340
<i>UWB Bowtie 2 x 2 Array Antenna for UWB Mobile Communication System</i> Mohd Azlishah Othman (University of Nottingham, United Kingdom), Mohamad Zoinol Abidin Bin Abd Aziz (Universiti Teknikal Malaysia Melaka, Malaysia), Mohd Muzafar Ismail (University Tecnical Malaysia Melaka, Malaysia), Maizatul Alice Meor Said (UTeM, Malaysia), Ridza Ramlee (Universiti Teknikal Malaysia Melaka, Malaysia), Mohamad Misran (Universiti Tenikal Malaysia Melaka, Malaysia), Hamzah Asyrani Sulaiman (Universiti Teknikal Malaysia Melaka, Malaysia), Mohd Hamizan Radzi (Politeknik Ungku Omar, Malaysia)	' ' * 340
<i>A Coplanar Waveguide (CPW) Wideband Octagonal Microstrip Antenna</i> Tommi Hariyadi (Universitas Pendidikan Indonesia, Indonesia)	340

7oa a uniVation TeVnologm

<i>Dark and Bright Soliton in Fiber Optics</i> Subekti Ari Santoso (University Al - Azhar of Indonesia, Indonesia)	344
<i>Photoinduced Modulation of Ferroelectric Polarization in MultiferroicTbMnO3</i> Ismudiati Handayani (Telkom Institute of Technology, Indonesia)	350
<i>Development of Underwater Acoustic Communication Model: Opportunities and Challenges</i> Tri Budi Santoso (Institut Teknologi Sepuluh Nopember (ITS), Indonesia)	358
<i>RF MEMS Capacitor for Microwave Applications</i> Ruddy Chatim (University of Kassel, Germany), Volker Viereck (University of Kassel, Germany), Andreas Jäkel (University of Kassel, Germany), Roshanak Ghahremani (Research Assistant, Germany), Jaime Zamudio (University of Kassel, Germany), Carl Sandhagen (University of Kassel, Germany), Axel Bangert (University of Kassel, Germany), Hartmut Hillmer (University of Kassel, Germany)	363
<i>Temperature Effects on Parallel Cascaded Silica Based Microring Resonator</i> Fakhrurrozi Amran (University of Al Azhar Indonesia, Indonesia)	367
<i>Using Selective Partial Update - Selective Regressor Affine Projection Algorithms for Adaptive Equalization in Underwater Acoustic Communications</i> Masoumeh Soflaei (Tarbiat Modares University, Iran), Paeiz Azmi (Tarbiat Modares University, Iran), Ehsan Mostajeran (University of Malaya, Malaysia)	372
<i>UWB Chebyshev Band Pass Filter for UWB Communication</i> Mohd Azlishah Othman (University of Nottingham, United Kingdom), Mohamad Zoinol Abidin Bin Abd Aziz (Universiti Teknikal Malaysia Melaka, Malaysia), Mohd Muzafar Ismail (University Tecnical Malaysia Melaka, Malaysia), Maizatul Alice Meor Said (UTeM, Malaysia), Mohamad Misran (Universiti Tenikal Malaysia Melaka, Malaysia), Ridza Ramlee (Universiti Teknikal Malaysia Melaka, Malaysia), Hamzah Asyrani Sulaiman (Universiti Teknikal Malaysia Melaka, Malaysia), Mohd Shaifuddin Ishak (Politeknik Ungku Omar, Malaysia)	377

Intelligent Systems

<i>RTET - A Round Trip Engineering Tool</i> Leckraj Nagowah (University of Mauritius, Mauritius), Zarah Goolfee (University of Mauritius, Mauritius), Chris Bergue (University of Mauritius, Mauritius).....	381
<i>A Mobile Knowledge Management Framework for Police Force</i> Zameer Jhingut (University of Mauritius, Mauritius), Soulakshmee D. Nagowah (University of Mauritius, Mauritius).....	388
<i>A Novel Improved Neighbor Discovery Method for an Intelligent-AODV in Mobile Ad Hoc Networks</i> Ehsan Mostajeran (University of Malaya, Malaysia), Rafidah Md Noor (University of Malaya, Malaysia), Hassan Keshavarz (Faculty of Computer Science and Information Technology, University of Malaya, Malaysia).....	395
<i>Analysis and Evaluation Optimization Dynamic Source Routing (DSR) Protocol in Mobile Adhoc Network Based on Ant Algorithm</i> Istikmal Istikmal (Institut Teknologi Telkom, Indonesia).....	(\$)
<i>The State-of-the-Art Intelligent Navigational System for Monitoring in Mobile Autonomous Robot</i> Murtaza Hussain (Mehran University of Engineering and Technology (MUET), Pakistan), Noor Ansari (Kings College, United Kingdom), Kishore Kosuri (VTT Technical Research Centre, Norway), Mahreen Khan (University of Karachi, Pakistan).....	(\$)
<i>Dynamic Process Migration Framework</i> Amirreza Zarrabi (Universiti Putra Malaysia, Malaysia), Khairulmizam Samsudin (Universiti Putra Malaysia, Malaysia), Amin Ziaei (University of Malaya, Malaysia).....	410
<i>Fuzzy Logic for Bandwidth Allocator Applies on IP Multimedia Traffic</i> Fanny Fauzi (Beihang University, P.R. China), Dongkai Yang (Beihang University, P.R. China).....	416

Smart Services

<i>BPKIMI's Information System Strategic Planning Toward Excellent Public Services</i> Kemas Wiharja (Institut Teknologi Telkom, Indonesia).....	422
<i>Critical Success Factor for E-learning Implementation in Institut Teknologi Telkom Bandung Using Structural Equation Modeling</i> Nur Laily (Telkom Institute of Technology, Indonesia), Amelia Kurniawati (Telkom Institute of Technology, Indonesia), Ika Puspita (Telkom Institute of Technology, Indonesia).....	427
<i>Marketing Mix Strategy in Increasing Marketing Performance in Indonesia Telecommunication Services Companies</i> Endang Chumaidiyah (Telkom Institute of Technology, Indonesia).....	433
<i>Microblogging Sentiment Analysis with Lexical Based and Machine Learning Approaches</i> Waruh Maharani (Institute of Technology Telkom, Indonesia).....	439
<i>Preliminary Research on E-Government Development Overview: An Assessment on e-Government Capabilities in Indonesia</i> Aries Susanto (UIN Syarif Hidayatullah Jakarta, Indonesia), Rizal Broer Bahaweres	

(University of Indonesia, Indonesia)	444
<i>Techno-Economic and Regulation Impact Analysis of Mobile Number Portability Implementation</i>	
Moch Fahu Rizal (Telkom Polytechnic, Indonesia), A Muayyadi (Telkom Institute of Technology, Indonesia)	448