# **2016 10th International Conference** on Telecommunication Systems **Services and Applications** (TSSA 2016)

Denpasar, Bali, Indonesia 6 – 7 October 2016



IEEE Catalog Number: CFP1691P-POD **ISBN:** 

978-1-5090-5171-7

# **Copyright © 2016 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:	CFP1691P-POD
ISBN (Print-On-Demand):	978-1-5090-5171-7
ISBN (Online):	978-1-5090-5170-0

#### 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 Content**

Progress in Applied Compressive Sampling: A Brief Review on Methods and Devices.....1 Andriyan B. Suksmono

Design and Fabrication of Triple Frequency Microstrip Patch Antenna by Attaching Tuning Stub Element.....5 *Wanis Alfitouri Hasan, Mohamed Mansour Saleh, Ahmed K. Jasim, Omar Alknbar, Ahmad N. Abdulfattah, Mohammed E. Ali* 

Design and Implementation of Mobile Antenna VSAT with Microstrip Array Based at Ku Band Frequency.....9 Hanny Madiawati, Joko Suryana

Simulation of the Fault Management with Self Healing Mechanism (Case study: LTE Network in Banda Aceh Area).....14 Fidyatun Nisa, Sigit Haryadi

An Academic Study of Roadmap of 5G Implementation in Indonesia.....19 Bambang Supriadi, Sigit Haryadi

Implementation of Affine Transform Method and Advanced Hill Cipher for Securing Digital Images.....24 Yoppy Sazaki, Robby Sandhy Putra

Evaluation of Secure Capability-based Access Control in the M2M Local Cloud Platform.....29 Bayu Anggorojati , Neeli Rashmi Prasad, Ramjee Prasad

Performance Improvement on the Downlink HAPS Communication Channel Employing MIMO Antenna.....35 *K.G. Siahaan, Iskandar* 

Comparison of Preamble and Cyclic Prefix Method for Frequency Synchronization in OFDM Systems.....39 Iskandar, W. Khabzli

Techno Economic Approach of Spectrum Sharing between Radar Bands and LTE Cellular System.....44 *Eka P.P.Iswardiani, Denny Setiawan, Abdi Wahab, Rizal Broer Bahaweres, Mudrik Alaydrus* 

Panning Interaction Development for Citation Network Visualization.....49 *Riska, Dwi H. Widyantoro* 

Increasing Accuracy of Traffic Light Color Detection and Recognition Using Machine Learning.....54 *Jeffrey L. Binangkit, Dwi H. Widyantoro* 

Performance Comparison of Pilot Aided Channel Estimation in SMT-FBMC and OFDM.....59 Lerry Bayunuari Nugraha, Effrina Yanti Hamid

Achieving Accurate Geo-location Detection Using Joint RSS-DOA Factor Graph Technique.....64 Muhammad Reza Kahar Aziz, Shofiyati Nur Karimah, Niimi Yoshio, Khoirul Anwar, Tad Matsumoto

Traffic Light Candidate Elimination Based on Position.....70 Winson Waisakurnia, Dwi H. Widyantoro A High Payload Reversible Watermarking Scheme based-on OFDM-CDMA.....75 Rahmawati Hasanah, Mohammad Sigit Arifianto

A Compressive-Sampling Stepped-Frequency Continuous Wave Sodar System.....81 Hendryadi Daniil Kurniawan, Andriyan Bayu Suksmono

Planning and Performance Analysis of Downlink Inter-Band Carrier Aggregation for LTE-Advanced 3GPP Released 13.....85 *B.M Hasiandra, Iskandar* 

ARMA Model for Multipath Rayleigh Fading using The Minimum Description Length Criterion.....91 *Hana A. Rodhiah, E.Y. Hamid* 

The Impact of Background Traffic Towards Multimedia Content Delivery Quality on Limited Capacity Network.....96 Jay Idoan Sihotang, Yoanes Bandung

Fractional-N PLL Synthesizer for Linear FMCW Radar Signal Generator.....102 Ratna Indrawijaya, Dayat Kurniawan, Ros Sariningrum, Dadan Muliawandana, Bagus Edi Sukoco

Energy Efficiency and Loss of Transmission Data on Wireless Sensor Network with Obstacle.....108 Abdi Wahab, Fandi Ali Mustika, Rizal Broer Bahaweres, Deny Setiawan, Mudrik Alaydrus

Feature Expansion using Word Embedding for Tweet Topic Classification.....114 Erwin B. Setiawan, Dwi H. Widyantoro, Kridanto Surendro

Implementation of Finite Impulse Response Digital Filter in Digital Signal Processor Kit for Voice Signal Application.....119 Endang Djuana, Suhartati Agoes, R. Deiny Mardian, Revi Noviananda Nurmalasari

Experimental Approach of FMCW Signal Generation using Direct Digital Synthesizer Module.....124 *Kusmadi, Achmad Munir* 

Development of FMCW SAR on L-Band Frequency for UAV Payload.....128 Zainal Abidin and Achmad Munir

A Novel of Square Loop Resonator Band Pass Filter by Using Cross-Shape Input/Output Coupling for 9GHz Application.....133 Edwar and Achmad Munir

Development of Multiple Elements of SRR-based Bandpass Filter....137 Mohamad Syahral and Achmad Munir

Performance of 5G Networks Massive MIMO Using 5,9 GHz Band.....141 Erma Putri Fitriawati and Joko Suryana

Design and Implementation of S-Band MIMO FMCW Radar.....147 Joko Suryana and Muhammad Ridha

Model Design and Electronic Service Guide (ESG) Analysis for DVB Broadcast on Hybrid Platform and Unicast Network.....152 *P.B. Suroaji, M. Ulilalbab, Iskandar, T. Hendrawan, and N. Rachmana* 

The Effect of Packet Loss and Delay Jitter on the Video Streaming Performance Using H.264/MPEG-4 Scalable Video Coding.....157 Yuris Mulya Saputra, Hendrawan

Techno-economic Analysis of Backbone Network Development, Case Study: PT. XYZ Network.....163 Mukti Rahim, Nana Rachmana S

Dual Polarization X-Band Square Horn Antenna.....168 Abdul Wahid, Chairunnisa, Achmad Munir

Design and Modulation Analysis of Cascade LNA for L-band Very Low Magnitude Signal.....172 *Felix Gunawan, Basuki Rachmatul Alam* 

Regulatory Incentives in Indonesia.....176 *M. Ridwan Effendi* 

Calculation of Encryption Algorithm Combination for Video Encryption Using Two Layers of AHP.....180 *Alvin Mustafa, Hendrawan* 

Traffic Modeling and Interface Dimensioning on EUTRAN LTE Network.....187 Ayu Rosyida Zain, Hendrawan

Design and Implementation of Smart Home Surveillance System.....191 *Tutun Juhana, Vivi Gusti Anggraini* 

Smart Non Intrusive Power Consumption Monitoring System.....196 Tutun Juhana, Arif Indra Irawan

Simulation of Parallel Duplicate Address Detection (PDAD) for Macro Handover in HMIPv6.....200 Hamzah U. Mustakim, Tutun Juhana

Secured H.264 Video Coding Using Combination of AES/CFB/PKCS5 Padding Encryption on Various Video Frame (I, P, B).....205 *Tahta Adiguna, Hendrawan* 

Design and Realization of Multi-Wide-Band FMCW Radar for Educational Purposes.....210 Andriyan B. Suksmono, Donny Danudirdjo, Dodi Zulherman, Tommi Haryadi, Rizki Putra Prastio

Network Management System (NMS) using Local Collector Mediation Devices.....213 Hendrawan, Nana Rachmana, Iskandar

Doppler Polarimetric Processing with Spectrum Dealising of Weather Radar.....217 Irma Zakia, Andriyan Bayu Suksmono

IT Governance Design for Hospital Management Information System. Case Study : X Hospital.....222 Wervyan Shalannanda, Rifqy Hakimi

Case Study Analysis on BGP : Prefix Hijacking and Transit AS.....230 *Rifqy Hakimi, Yuris Mulya Saputra, Beny Nugraha* 

The Effect of Scaling the Size of Topology and Content Stored on the Named Data Networking.....238 *Hamonangan Situmorang, Nana Rachmana, Tutun Juhana*