

2012 6th International Symposium on Medical Information and Communication Technology

(ISMICT 2012)

**La Jolla, California, USA
25 – 29 March 2012**



**IEEE Catalog Number: CFP1241M-PRT
ISBN: 978-1-4673-1234-9**

TABLE OF CONTENTS

A Study of PDA and Smartphone Adoption Rates at King Saud Medical City Hospitals.....	1
<i>B. Saddik, D. Barakah, B. Aldosari</i>	
BAN MAC Protocol for Optimization the Ratio between CAP and CFP	4
<i>Y. Fujiura, C. Sugimoto, R. Kohno</i>	
PPM Based Super-Regenerative Receiver for Body Area Networks (BAN).....	8
<i>L. Huang, K. Ma, P. Zhang, G. Schaik, G. Dolmans</i>	
Experiments of Ultra Wideband-based Wireless Body Area Networks with Multi-Nodes Attached to Body	12
<i>H. Katsuta, Y. Takei, K. Takizawa, T. Ikegami</i>	
A Two-Threshold Fall Detection Algorithm for Reducing False Alarms.....	16
<i>A. Sorvala, E. Alasaarela, H. Sorvoja, R. Myllyla</i>	
UWB Geolocation of Implanted Devices Using Medical Images	20
<i>H. Takayama, C. Sugimoto, R. Kohno</i>	
On the Ambiguity of Quality of Service and Quality of Experience Requirements for eHealth Services	24
<i>M. Ullah, M. Fiedler, K. Wae</i>	
Activity Classification Using a State Transition Diagram and Activity Levels	28
<i>A. Sorvala, E. Alasaarela, H. Sorvoja, R. Myllyla</i>	
M2M Communications for E-Health: Standards, Enabling Technologies, and Research Challenges	32
<i>Z. Fan, S. Tan</i>	
Development of a Patient Remote Monitoring System in a Hospital.....	36
<i>S. Hara, H. Sugano, T. Kozaki, T. Inoue, T. Tsujioka, S. Nakajima, H. Namkamura, K. Takeuchi</i>	
A Study On HARQ Error-Controlling Scheme For The Wireless Control Of Medical Equipment	40
<i>T. Futatsugi, C. Sugimoto, R. Kohno</i>	
Impact of Propagation Characteristics on RSSI-Based Localization for 400 MHz MICS Band Implant Body Area Networks.....	44
<i>D. Anzai, S. Aoyama, J. Wang</i>	
Sample-wise Differential Detection of Impulse-Radio Ultra-Wideband Pulse Position Modulated Symbols.....	48
<i>I. Dotlic, R. Miura</i>	
Energy Efficient Body Area Networking for mHealth Applications	52
<i>S. Dumanli, S. Gormus, I. Craddock</i>	
Towards Physical Activity Support Community.....	56
<i>L. Elloumi, B. Bejjnum, H. Hermens</i>	
Coexistence of UWB Systems for Body Area Networks in AWGN	60
<i>M. Hernandez, R. Miura</i>	
Autonomous Operation of Super-Regenerative Receiver in BAN.....	64
<i>P. Kalyanasundaram, L. Huang, K. Imamura, G. Dolmans</i>	
Study on Position Estimation of Implanted Devices by Using Signal Processing for UWB Ground Penetrating Radar	68
<i>Y. Kazumoto, C. Sugimoto, R. Kohno</i>	
Performance of Wireless Real-Time System for ECG Monitoring in Hospitals.....	72
<i>L. Mucchi, F. Trippi, A. Carpini, M. Amato, R. Cozzani</i>	
Novel Modulation Adaptation Techniques for IEEE 802.15.4a UWB System	77
<i>T. Paso, V. Niemela, J. Haapola, J. Iinatti</i>	
A Study on Packet Design to Realize Position Estimation as well as Information-Communication for Mobile Robot.....	81
<i>R. Iwakura, C. Sugimoto, R. Kohno</i>	
Applicability of Finite Integration Technique for the Modelling of UWB Channel Characterization	85
<i>M. Sarestoniemi, T. Tuovinen, M. Hamalainen, K. Yazdandoost, E. Kaivanto, J. Iinatti</i>	
Performance of UWB Receivers Using IEEE802.15.4a's Minimum Burst Lengths	89
<i>M. Hamalainen, V. Niemela, J. Iinatti, R. Kohno</i>	
Power Efficient Wakeup Mechanisms for Wireless Body Area Networks.....	93
<i>K. Kwak, M. Ameen, J. Huh</i>	
An Energy-Efficient Body Channel Communication based on Maxwell's Equations Analysis of On- Body Transmission Mechanism.....	99
<i>J. Bae, K. Song, H. Cho, H. Lee, H. Yoo</i>	

Vital Sign Monitoring by using UWB Body Area Networks in Hospital and Home Environments	104
<i>K. Yamasue, K. Takizawa, K. Sodeyama, C. Sugimoto, R. Kohno</i>	
Propagation Characteristics for 2.45 GHz Dynamic Wearable WBAN using Multiport VNA.....	108
<i>T. Aoyagi, J. Takada, T. Kobayashi, K. Takizawa, K. Yazdandoost, H. Li, M. Hernandez, K. Hamaguchi, R. Miura, R. Kohno</i>	
A Geolocation Approach Using UWB Deterministic Modeling for Non Line-Of-Sight Conditions	112
<i>M. Kabir, R. Kohno</i>	
A Novel Multi Purpose Robotic Dispenser with Database Management System	116
<i>F. Mehboob</i>	
High Accuracy Tag Tracking System Based on TDOA in Medical Network	120
<i>K. Enda, M. Kabir, F. Ono, R. Kohno</i>	
Accuracy of Localization System Inside Human Body using a Fast FDTD Simulation Technique	124
<i>P. Swar, K. Pahlavan, U. Khan</i>	
A Hardware Platform for Performance Evaluation of In-body Sensors.....	130
<i>S. Li, J. He, R. Fu, K. Pahlavan</i>	
Formal Specification of Humanitarian Disaster Management Processes	134
<i>N. Alrajeh, B. Bounabat</i>	
Smart Skin for Tactile Prosthetics	138
<i>J. Farserotu, J. Baborowski, J. Decotignie, P. Dallemagne, C. Enz, F. Sebelius, B. Rosen, C. Antfolk, G. Lundborg, A. Bjorkman, T. Knieling, P. Gulde</i>	
Author Index	