The 5th International Conference on Information & Communication Technology and Systems (ICTS) 2009

August 4th 2009, Surabaya - Indonesia

SECTION 1

DEPARTMENT OF INFORMATICS
FACULTY OF INFORMATION TECHNOLOGY
INSTITUT TEKNOLOGI SEPULUH NOEMBER

Scanned by CamScanner
Proceeding of
the 5th International Conference on Information &
Communication Technology and Systems

Executive Board
Prof. Ir. Priyo Suprobo, M.S, P.hD
Rector of ITS
Prof.Drs. Ec.Ir. Riiyanarto Sarno M.Sc Ph.D
Dean of Information Technology Faculty (FTIF) ITS
Yudhi Purwananto, S.Kom, M.Kom
Head of Informatics Department, FTIF ITS

Technical Program Committee
Prof. Abdul Hanan Abdullah
Universiti Teknologi Malaysia, Malaysia
Prof. Sampei Mitsui
Tokyo Institute of Technology, Japan
Prof. Akira Asano
Hiroshima University, Japan
Prof. Pitoyo Hartono
Future University, Japan
Prof. Benyamin Kusumoputro
UI, Indonesia
Prof. Dadang Gunawan
UI, Indonesia
Prof. Arif Djunaidy
ITS, Indonesia
Prof. Supeno Djanali,
ITS, Indonesia
Prof. Riiyanarto Sarno
ITS, Indonesia
Prof. Handayani Tjandra
ITS, Indonesia
Prof. Mauridhi Hery Purnomo
ITS, Indonesia
Dr. Oerip S. Santoso
ITB, Indonesia
BV Durga Kumar, M.Tech
UNITAR, Malaysia

Dr. L.J.M Rothkrantz
TU Delft, The Netherlands
Archi Delphinanto, P.D.Eng.
TU Eindhoven, The Netherlands
Dr. Mohamed Medhat Gaber
Monash University, Australia
Dr. Joko Lianto Buliali
ITS, Indonesia
Kridanto Surendro, PhD
ITB, Indonesia
Esther Hanaya, M.Sc.
ITS, Indonesia
Muchammad Husni, M.Kom
ITS, Indonesia
Dr. Agus Zainal, M.Kom
Hiroshima Univ, Japan
Waskitho Wibisono, M.Sc.
Monash University, Australia
Yudhi Purwananto, M.Kom
ITS, Indonesia
ITS, Indonesia
Siti Rochimah, M.T
UTM, Malaysia
Nanik Suciati, M.Kom
Hiroshima University, Japan

ISSN 2085-1944
ORGANIZING COMMITTEE

Chairman
Anny Yuniarti, S.Kom, M.Comp Sc.
Informatics Department, Faculty of Information Technology, Sepuluh Nopember Institute of Technology

Secretary
Radityo Anggoro, S.Kom, M.Eng.Sc

Website and Design
Ridho Rahman Hariadi, S.Kom
Hadziq Fabroyir, S.Kom

Proceeding and Registration
Chastine Fatichah, S.Kom,M.Kom.
Umi Laili Yuhana, S.Kom, M.Sc.
Dini Adni Navastara, S.Kom
Wijayanti Nurul Khotimah, S.Kom
Ratih Nur Esti Anggraini, S.Kom
Erina Letivina Anggraini, S.Kom

Tour and Promotion
Victor Hariadi, S.Si.,M.Kom
Bagus Jati Santoso, S.Kom
Arya Yudhi Wijaya, S.Kom

Seminar Kit and Accommodation
Bilqis Amaliah, S.Kom,M.Kom
Nurul Fajrin Ariyani, S.Kom

Contact Address
Informatics Department, Faculty of Information Technology, Sepuluh Nopember Institute of Technology Surabaya
Gedung Teknik Informatika ITS,
Jl. Raya ITS Keputih Sukolilo Surabaya Indonesia
Tel. +62-31-5939214
Fax. +62-31-5913804
Homepage: http://icts.if.its.ac.id
PREFACE

This proceeding contains sorted papers from the International Conference on Information & Communication Technology and Systems (ICTS) 2009. ICTS 2009 is the fifth annual international event organized by Informatics Department, Faculty of Information Technology, ITS Surabaya Indonesia.

The 5th ICTS 2009 proceeding is divided into three sections based on a research interest. Section 1 contains all about Computer & Communication Networks, Computer Education, Society and Management. Section 2 covers Software Engineering, while Section 3 includes topics on Intelligent and Visual Computing.

This event is a forum for computer science, information and communication technology community for discussing and exchanging the information and knowledge in their areas of interest. It aims to promote activities in research, development and application on computer science, information and communication technology.

We would like to express our gratitude to all of keynote speakers: Professor Abdul Hanan Abdullah and Professor Sampei Mitsuji.

We would like to express our gratitude to all technical committee members who have given their efforts to support this conference.

We also would like to express our sincere gratitude to our sponsors: Faculty of Engineering Kumamoto University Japan, JICA PREDICT - ITS, IEEE Indonesia Section, HMTC and Computer Society for great support and contribution to this event.

We would like to thank you to all the authors and the participants of ICTS 2009. This year the authors and the participants come from England, Germany, Indonesia, Iran, Malaysia, New Zealand, Oman, Poland, Switzerland and Taiwan. We hope next year you will participate again in the ICTS 2010.

Finally, we also would like to thank to all parties for the success of ICTS 2009.

Editorial Team
# TABLE OF CONTENT

<table>
<thead>
<tr>
<th>A01</th>
<th>A FAIR SOLUTION FOR BANDWIDTH RE-ALLOCATION MANAGEMENT IN 3G WIRELESS CELLULAR NETWORKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Z. Zabanoot</td>
</tr>
<tr>
<td>A02</td>
<td>A FRAMEWORK OF PLAGIARISM DETECTION SYSTEM IN COOPERATIVELY DISTRIBUTED ENVIRONMENT</td>
</tr>
<tr>
<td></td>
<td>Agung Sediyono</td>
</tr>
<tr>
<td>A03</td>
<td>AN IMPLEMENTATION OF PACKET PRIORITY AND FIFO QUEUING MODEL IN PACKET RADIO SYSTEM</td>
</tr>
<tr>
<td></td>
<td>H. Lami</td>
</tr>
<tr>
<td>A04</td>
<td>ANALYSIS OF PACKETS ABNORMALITIES IN WIRELESS SENSOR NETWORK</td>
</tr>
<tr>
<td></td>
<td>A.H Azni</td>
</tr>
<tr>
<td>A05</td>
<td>ARR - APPOINTMENT-BASE RUMOR ROUTING IN WIRELESS SENSOR NETWORKS</td>
</tr>
<tr>
<td></td>
<td>Hamid Shokrzadeh</td>
</tr>
<tr>
<td>A06</td>
<td>CHARACTERIZATION OF A 12.15 GHZ MICROSTRIP ANTENNA ARRAY FOR MOBILE VSAT APPLICATION</td>
</tr>
<tr>
<td></td>
<td>Wisma</td>
</tr>
<tr>
<td>A07</td>
<td>DESIGN ALGORITHM FOR THE COMMUNICATIONS WIRELESS SYSTEM AD HOC USING MODEM</td>
</tr>
<tr>
<td></td>
<td>Yetursance Y. Manafe</td>
</tr>
<tr>
<td>A08</td>
<td>DESIGN OF 2.4 GHZ RECTANGULAR PATCH ANTENNA USING EMC FEEDING</td>
</tr>
<tr>
<td></td>
<td>Dina Angela</td>
</tr>
<tr>
<td>A09</td>
<td>DEVELOPMENT OF CONTEXT CALL APPLICATION OVER GPRS NETWORK USING J2ME</td>
</tr>
<tr>
<td></td>
<td>Arif Wibison</td>
</tr>
<tr>
<td>A10</td>
<td>DRUG INTERACTION CHECKER</td>
</tr>
<tr>
<td></td>
<td>Tigor Nauli</td>
</tr>
<tr>
<td>A11</td>
<td>EFFECTIVE SCHEDULING POLICY FOR DELAY TOLERANT NETWORKS WITH FINITE BANDWIDTH</td>
</tr>
<tr>
<td></td>
<td>Dr. R.S.D. Wahidabandu</td>
</tr>
<tr>
<td>A12</td>
<td>FOSTERING IT-BASED INNOVATIONS THROUGH INNOVATION-CONDUCTIVE IT PROCESS AND IT SERVICE PORTFOLIO MANAGEMENT</td>
</tr>
<tr>
<td></td>
<td>Michael Amberg</td>
</tr>
</tbody>
</table>

ISSN 2085-1944
A13 HIDDEN NODES OF WIRELESS SENSOR NETWORKS ANALYSIS AND AVOIDANCE
A. Sjamsujar Rachman............................................................... 69 - 72

A14 IMPLEMENTATION OF NETWORK SIMULATOR IN ANALYZING VIDEO TRANSMISSION OVER WIRELESS NETWORKS
Kalvein Rantelobo............................................................... 73 - 78

A15 INTEGRATION OF TRANSPORT LAYER TO CONNECTIONLESS MODE NETWORK SERVICE IN AERONAUTICAL TELECOMMUNICATION NETWORK (ATN)
Dimas Isyianur............................................................... 79 - 86

A16 INTERSECTION TREE-BASED MULTICAST PROTOCOL FOR VANETS
Radityo Anggoro............................................................... 87 - 94

A17 KARHUNEN-LOEVE EXPANSION ON RAIN RATES NONSTATIONERS SIGNAL FOR MILLIMETER TRANSMISSION COMMUNICATION CHANNEL
Made Sutha Yadinaya ...................................................... 95 -100

A18 MOBILE DATA MANAGEMENT FOR VIRTUAL 3D GUIDE
Sarwoerd............................................................... 111 - 118

A19 PERFORMANCE EVALUATION FOR V-BLAST MIMO SYSTEMS WITH ADAPTIVE POWER AND ADAPTIVE MODULATION
Nurhayati............................................................... 119 - 122

A20 PERFORMANCE OF VARIOUS CODECS RELATED TO JITTER BUFFER VARIATION IN VOIP USING SIP
Iwan Handoyo Putro............................................................... 128 - 138

A21 ROUTING ALGORITHM FOR GATEWAY AD HOC WIRELESS NETWORKS
Nixson Jhekskial Meok............................................................... 139 - 144

A22 SECURE BROADCAST DISTRIBUTION USING JAVA MEDIA FRAMEWORK (JMF) PLUG-INS FOR VIDEO DISTRIBUTION
Erina Letivina A............................................................... 145 - 154

A23 SINGLE NODE WIRELESS SENSOR NETWORK ARCHITECTURE AS A PLATFORM FOR DISTRIBUTED CONTROL SYSTEMS
Abdul Harris Junus Ontowirjo............................................................... 155 - 162

A24 SOFTWARE DESIGN AND IMPLEMENTATION OF COMMUNICATION SERVER IN MULTIPLAYER ONLINE ROLE PLAYING GAME BASED ON CLIENT-SERVER ARCHITECTURE
Ridho Rahman Hariadi............................................................... 163 - 168

A25 THE ELECTRONIC CONTROL SYSTEM BASED SHORT MESSAGE SERVICE (SMS)
Winardi............................................................... 169 - 176

A26 THE PERFORMANCE ANALYSIS OF CACHE MEMORY ORGANIZATION FOR SKETCH-BASED APPLICATION
Theophilus Wellem............................................................... 177 - 184

A27 TSSSENSASIM - TOPNODE AN IMPROVED WIRELESS SENSOR NETWORK SIMULATOR
Al Fauzi............................................................... 185 - 190

A28 VERSIONING-DELTA FILESYSTEM DEVELOPMENT ON UNIX ENVIRONMENT BASED ON PYTHON FUSE
Bagus Jati Santoso............................................................... 191 - 196

D01 A COMPARISON OF ENTERPRISE ARCHITECTURE DEVELOPMENT METHODOLOGY
Roni Yunis............................................................... 197 - 204

D02 A SCALABLE ARCHITECTURE FOR MOBILE PROJECT MANAGEMENT INFORMATION SYSTEM
Tri A. Budiono............................................................... 205 - 210

ISSN 2085-1944
D03  AN EXPLORATION ON STRATEGY AND POLICY OF E-LEARNING IMPLEMENTATION IN INDONESIAN HIGHER EDUCATION
Angela Prima Kurniati .............................................................. 211 - 218

D04  AN IDEAL STRUCTURE OF OPEN SOURCE COMMUNITIES
Andi Wahju Rahardjo Emanuel ................................................ 219 - 224

D05  COMMUNITY ASSOCIATIONS AS A KNOWLEDGE BASE TO IMPROVE FOCUSED CRAWLING RECALL
Siti Maimunah .................................................................................. 225 - 230

D06  E-COMMERCE SOLUTION TO PARKING SPACE OPTIMIZATION USING BLUETOOTH TECHNOLOGY
R. W. Tri Hartono .............................................................................. 231 - 238

D07  IMPLEMENTING THE INTEGRATION LEVEL OF SMS-BASED E-GOVERNMENT MODEL: A CASE STUDY OF BILLING PAYMENT SYSTEM OF PLN AND TELKOM IN INDONESIA
Tony Dwi Susanto ............................................................................. 239 - 246

D08  MEASURING STUDENTS' SKILL PROGRESS BY USING FUZZY EXPERT SYSTEM
Mahdi Hassani Goodarzi ............................................................... 247 - 252

D09  NETWORK INVENTORY COLLECTION SYSTEM FOR MANAGING AND MONITORING INFORMATION TECHNOLOGY ASSET
Jusak ................................................................................................. 253 - 256

D10  NURSING INFORMATICS DEVELOPMENT TO CREATE
Ferry Efendi ..................................................................................... 257 - 262

D11  ONLINE TRYOUT SYSTEM FOR ENTERANCE EXAMINATION
Umi Laili Yuhana .............................................................................. 263 - 268

D12  PRIVACY AND AUTHENTICATION FOR EDUCATION SEMANTIC WEB
Devi Munandar ................................................................................ 269 - 276

D13  RESTRUCTURING COMPONENTS OF INTEGRATED HEALTH INFORMATION SYSTEM IN OUTPATIENT AND INPATIENT DEPARTMENT
Ahmad Holil Noor Ali ................................................................. 277 - 284

D14  SERVICE ORIENTED COMPUTING (SOC) IN ENTERPRISE ENVIRONMENT
Ahmad Nurul Fajar ......................................................................... 285 - 290

D15  THE DEVELOPMENT OF E-LEARNING SYSTEM THROUGH WEB SERVICES APPROACH
Ahmad Luthfi .................................................................................. 291 - 298

D16  THE IMPLEMENTATION OF ACTIVE DATABASES FOR MANAGEMENT INFORMATION SYSTEM OF HIGHER EDUCATION INSTITUTION
Wijayanti Nurul K ................................................................. 299 - 304

D17  UTILIZATION OF DIGITAL LIBRARY AS KNOWLEDGE-SHARING DEVELOPMENT SUPPORT
Umi Laili Yuhana ............................................................................. 305 - 310

D18  X.509 CERTIFICATE REVISITED
Tohari Ahmad ................................................................................ 311 - 316