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# INTERNATIONAL CONFERENCE



The Second International Conference on Engineering and Technology Development

# 2ªICETD 2013

27, 28, 29 August 2013, Bandar Lampung, Indonesia

# PROCEEDINGS







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Hosted by : Faculty of Engineering and Faculty of Computer Science, Bandar Lampung University (UBL), Indonesia

# **Z<sup>nd</sup>ICETD 2013**

THE SECOND INTERNATIONAL CONFERENCE ON ENGINEERING AND TECHNOLOGY DEVELOPMENT

> 28 -30 January 2013 Bandar Lampung University (UBL) Lampung, Indonesia

# PROCEEDINGS

Organized by:



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#### PREFACE

The Activities of the International Conference is in line and very appropriate with the vision and mission of Bandar Lampung University (UBL) to promote training and education as well as research in these areas.

On behalf of the Second International Conference on Engineering and Technology Development ( $2^{nd}$  ICETD 2013) organizing committee, we are very pleased with the very good response especially from the keynote speaker and from the participans. It is noteworthy to point out that about 80 technical papers were received for this conference.

The participants of the conference come from many well known universities, among others : University Kebangsaan Malaysia - Malaysia, APTIKOM - Indonesia, Institut Teknologi sepuluh November - Indonesia, Surya Institute - Indonesia, International Islamic University - Malaysia, STMIK Mitra Lampung - lampung, Bandung Institut of Technology - Bandung, Lecture of The Malahayati University, B2TP - BPPT Researcher - lampung, Starch Technology Center - Lampung, Universitas Islam Indonesia – Indonesia, Politeknik Negeri Malang Malang, University of Kitakyushu – Japan, Gadjah Mada University – Indonesia, Universitas Malahayati – Lampung, Lampung University – lampung, Starch Technology Center - Lampung, Universitas Riau - Riau, Hasanuddin University -Indonesia, Diponegoro University – Indonesia, King Abdulaziz University – Saudi Arabia, Parahyangan Catholic University – Indonesia, National Taiwan University-Taiwan, Surakarta Christian University – Indonesia, Sugijapranata Catholic University - Indonesia, Semarang University - Indonesia, University of Brawijaya -Indonesia, PPKIA Tarakanita Rahmawati – Indonesia, Kyushu University, Fukuoka - Japan, Science and Technology Beijing - China, Institut Teknologi Sepuluh Nopember – Surabaya, Researcher of Starch Technology Center, Universitas Muhammadiyah Metro – Metro, National University of Malaysia – Malaysia.

I would like to express my deepest gratitude to the International Advisory Board members, sponsor and also to all keynote speakers and all participants. I am also gratefull to all organizing committee and all of the reviewers who contribute to the high standard of the conference. Also I would like to express my deepest gratitude to the Rector of Bandar Lampung University (UBL) who give us endless support to these activities, so that the conference can be administrated on time

Bandar Lampung, 29 August 2013-08-26

Mustofa Usman, Ph.D 2<sup>nd</sup> ICETD Chairman

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### **Table Of Content**

| Drganizing Committee<br>Γable Of Content  | i<br>v      |
|---|-------------|
| Keynote Speaker   |             |
| Recent Advances in Biofuel Cell and Emerging Hybrid System<br><b>Abdul Aziz Ahmad and Raihan Othman</b>   | 1           |
| 2. Waste Utilization Study Tailing Gold Mine in Way Linggo-Lampung, as Fin Aggregate Materials for Producing Mortar Materials based on concept of Green Technology<br>Lilies Widojoko & Susilawati. | e<br>1<br>8 |
| <ol> <li>Infrastructure Health Monitoring System (SHM) Development, a Necessity fo<br/>Maintance and Investigation</li> <li>Prof. Dr. Priyo Suprobo, Faimun, Arie Febry</li></ol>                   | r<br>7      |
| 4. Four Phases Quality Function Deployment (Qfd) By Considering Kano Concept<br>Time And Manufacturing Cost<br>Prof. Dr. Moses L Singgih, Dyah L. Trenggonowati, Putu D. Karningsih 2               | ,<br>2      |

#### Speaker

| 1. | Comparative Analysis for The Multi Period Degree Minimum Spanning Tree Problem   |
|----|--|
|    | Wamiliana, Amanto, and Mustofa Usman   |
| 2. | Choosing The Right Software In Supporting The Successful of Enterprise ERP<br>Implementation<br><b>Yodhie Yuniarthe, Idris Asmuni</b>  |
| 3. | Climate Adaptive Technology In Maintaining Vernacularism Of Urban Kampong<br>Case study: KampungAdat (Indiginous) Mahmud, Bandung District,West Java<br><b>Marcus Gartiwa</b>                    |
| 4. | The Prospect Of Diesohol In Facing Fossil Fuel Crissis<br>M.C. Tri Atmodjo   |
| 5. | The Potential Of Agriculture And Forestry Biomass Wastes As Source Of Bioenergy<br>Hardoyo   |
| 6. | The Importance of Education Facility as Sustainable Urban Generation Tool<br>Fritz Akhmad Nuzir, Haris Murwadi and Bart Julien Dewancker   |
| 7. | The implementation of Secton Method for Solving Systems of Non Linear Equations<br>Nur Rokhman   |
| 8. | Quality Control Analysis Into Decrease The Level Defects On Coffee Product<br>Heri Wibowo, Sulastri and Emy Khikmawati   |
| 9. | Public Transportion Crisis In Bandar Lampung<br>Ida Bagus Ilham Malik  |
| 10 | <ul> <li>Geospatial Analysis of Land Use Change in Way Kuripan Watershed, Bandar<br/>Lampung City</li> <li>Candra Hakim Van Rafi'i1., Dyah Indriana Kusumastuti2., Dwi<br/>Jokowinarno</li></ul> |
| 11 | . Material Utilization Technology Of Agriculture And Forestry Waste<br>Hardoyo   |
| 12 | . The Supply Chain System Of Cassava On The Tapioca Industry<br>Hardoyo  |
| 13 | <ul> <li>Glass Technology In Natural Light Glasses On Aperture Element In The Architecture World</li> <li>Muhammad Rija &amp; MT Pedia Aldy</li></ul>  |

| 14. An Eksperimental Permeable Asphalt Pavement Using Local Material Domato<br>Stone On Quality Of Porous Asphalt  |
|--|
| Firdaus Chairuddin, Wihardi Tjaronge, Muhammad Ramli, Johannes<br>Patanduk   |
| <ol> <li>Coordination Of Architectural Concepts And Construction Systems</li> <li>Eddy Hermanto.</li> <li>129</li> </ol>   |
| <ol> <li>Seismic Assessment of RC Building Using Pushover Analysis</li> <li>Riza Ainul Hakim. 136</li> </ol>   |
| <ol> <li>Viscosity and Liquidity Index Relation for Elucidating Mudflow Behavior<br/>Budijanto Widjaja and Shannon Hsien-Heng Lee.</li> </ol>  |
| 18. The Use of Pozzolanic Material for Improving Quality of Strontium Liquid<br>Waste Cementation in Saline Environment during Nuclear Waste Immobilization<br>Process   |
| Muhammad Yusuf, HayuTyasUtami, Tri SulistiyoHariNugroho,<br>SusetyoHarioPutero   |
| <ol> <li>Geospatial Analysis Of Land Use And Land Cover Changes For Discharge At<br/>Way Kualagaruntang Watershed In Bandar Lampung<br/>Fieni Yuniarti, Dyah Indriana K, Dwi Joko Winarno</li></ol>                          |
| 20. Wifi Network Design For High Performance<br>Heru Nurwarsito, , KasyfulAmron, BektiWidyaningsih   |
| <ol> <li>Studi on The Efficiency Using Nature Materials in The Structural Elements of<br/>Reinforced Concrete Beam<br/>Yasser, Herman Parung, M. Wihardi Tjaronge, Rudy Djamaluddin 167</li> </ol>                           |
| <ol> <li>The Research Of Slow Release Nitrogen Fertilizer Applied In Sugarcane<br/>(Saccharum Officinarum) For Green Energy Bioethanol<br/>M.C. Tri Atmodjo, Agus Eko T. Nurul Rusdi, Sigit Setiadi, and Rina 179</li> </ol> |
| 23. Energy Utilization Technology Of Agriculture And Forestry Waste<br>Hardoyo   |
| <ol> <li>Implementation Of Fuzzy Inference System With Tsukamoto Method For Study<br/>Programme Selection<br/>Fenty Ariani and Robby Yuli Endra</li></ol>  |
| 25. The Analysis of Video Conference With ITU Standarization (International Telecommunication Union) That Joining in Inherent At Bandar Lampung University<br>Maria Shusanti F, Happy Reksa                                  |

| <ul> <li>26. The E-internal audit iso 9001:2008 based on accreditation form assessment matrix in study program for effectiveness of monitoring accreditation Marzuki, Maria Shusanti F</li></ul>     |
|--|
| 27. The Developing Of e-Consultations For Effectiveness of Mentoring Academy<br>Ahmad Cucus, Endang K  |
| <ol> <li>The Evaluation of information system performance in higher education case<br/>study with EUCS model at bandar lampung university<br/>Reni Nursyanti, Erlangga.</li> </ol>                   |
| <ol> <li>The Analysis Of History Collection System Based On AndroidSmartphone With<br/>Qr Code Using Qr CodeCase Study: Museum Lampung<br/>Usman Rizal, Wiwin Susanty, Sutrisno</li></ol>            |
| <ul> <li>30. Application of Complaint Handling by Approach Model of ISO 10002 : 2004 to<br/>Increase Complaint Services</li> <li>Agus Sukoco and Yuthsi Aprilinda.</li> </ul>                        |
| <ol> <li>Towards Indonesian Cloud Campus<br/>Taqwan Thamrin, Iing Lukman, Dina Ika Wahyuningsih</li></ol>  |
| 32. Bridging Router to ADSL Modem for Stability Network Connection<br>Arnes Yuli Vandika and Ruri Koesliandana   |
| <ul> <li>33. The Effect of Use Styrofoam for Flexural Characteristics of Reinforced Concrete<br/>Beams</li> <li>Yasser , Herman Parung, M. Wihardi Tjaronge, Rudy Djamaluddin 261</li> </ul>         |
| <ul><li>34. The Estimation Of Bioethanol Yield From Some Cassava Variety<br/>M.C. Tri Atmodjo</li></ul>  |
| <ul> <li>35. Effect of Superficial Velocity of Pressure Difference on The Separation of Oil And Water by Using The T-Pipe Junctionl</li> <li>Kms. Ridhuan and Indarto</li></ul>                      |
| <ul> <li>36. The use of CRM for Customer Management at Cellular Telecommunications<br/>Industry<br/>Ayu Kartika Puspa</li></ul>  |
| <ul> <li>37. Indonesian Puslit (Centre Of IT Solution) Website Analysis Using Webqual For<br/>Measuring Website Quality<br/>Maria Shusanti Febrianti and Nurhayati.</li> </ul>                       |
| <ol> <li>The E-internal audit iso 9001:2008 based on accreditation form assessment<br/>matrix in study program for effectiveness of monitoring accreditation<br/>Marzuki, Maria Shusanti F</li></ol> |

| 2 <sup>nd</sup> International Conference on Engineering and Technology Development | ISSN 2301-6590 |
|--|----------------|
| (ICETD 2013)   |                |
| Universitas Bandar Lampung   |                |
| Faculty of Engineering and Faculty of Computer Science                             |                |

| <ol> <li>Enhancing Quality Software Through CMMI-ISO 9001:2008and ISO 9126</li> <li>Agus Sukoco</li></ol>  |
|--|
| <ol> <li>Value Analysis Of Passenger Car Equivalent Motorcycle (Case Study Kartini<br/>Road Bandar Lampung)</li> <li>Juniardi, Aflah Efendi</li></ol>  |
| <ol> <li>Alternative Analysis Of Flood Control Downstream Of Way Sekampung River<br/>Sugito, Maulana Febramsyah.</li> </ol>  |
| <ol> <li>Analysis Of Fitness Facilities And Effective Use Of Crossing Road<br/>Juniardi, Edi Haryanto</li></ol>  |
| <ol> <li>Study On Regional Development Work Environment Panjang Port Lands In<br/>Support Bandar Lampung City As A Service And Trade<br/>Ir. A. Karim Iksan, MT, Yohn Ferry.</li> </ol>        |
| <ul><li>44. Analytical And Experimental Study Bamboo Beam Concrete</li><li>Hery Riyanto, Sugito, Juli</li></ul>  |
| <ul> <li>45. Comparative Analysis Of Load Factor Method Static And Dynamic Method (Case Study Akdp Bus Route Rajabasa - Bakauheni)</li> <li>A. Ikhsan Karim, MT., Ahmad Zulkily</li></ul>      |
| <ol> <li>Optimization Utilization Of Water Resourcesdam Batutegi Using Method Of<br/>Linear Program<br/>Aprizal,HeryFitriyansyah</li></ol>   |
| <ul> <li>47. Characteristics Generation Traffic Patterns And Movement In Residential Area<br/>(Case Study Way Kandis Residential Bandar Lampung)</li> <li>Fery Hendi Jaya, Juniardi,</li></ul> |
| <ol> <li>Use Study On Slight Beam Reinforced Concrete Floor Platein Lieu Of Scondary<br/>Beam<br/>Hery Riyanto, Sugito, Lilies Widodjoko, Sjamsu Iskandar</li></ol>                            |
| <ol> <li>Observation Of The Effect Of Static Magnetic Field 0.1 Mt On A-Amylase<br/>Activity In Legume Germination<br/>Rochmah Agustrina, Tundjung T. Handayani, and Sumardi</li></ol>         |
| <ol> <li>50. Effectiveness Analysis Of Applications Netsupport School 10 Based Iso / Iec<br/>9126-4 Metrics Effectiveness<br/>Ahmad Cucus, Nelcy Novelia</li></ol>                             |
| 51. Omparative Performance Analysis Of Banking For Implementing Internet<br>Banking<br>Reza Kurniawan  |

#### Effectiveness Analysis Of Applications *Netsupport School 10 Based* Iso / Iec 9126-4 Metrics Effectiveness

Ahmad Cucus, Nelcy Novelia

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Abstract-Along with the development of technology in this era of globalization, many organizations and educational world that requires increasingly sophisticated technology and assist in employment and education today, One technology that is helpful in the world of education is NetSupport School 10 technologies that can help teachers to monitor students' computer time lessons. NetSupport Discovered by a group called NetSupport Limited or now called NetSupport Inc.. based in peterborough English in 1989. Analysis Monitoring System NetSupport School 10 was conducted to determine whether this software has been effective in its use in accordance with Standard ISO / IEC 9126-4 Effectiveness Metrics and targets expected by the users, To find out more the effectiveness of NetSupport School 10 authors will describe the calculation of the level of effectiveness using metrics-metrics that exist in ISO / IEC 9126-4 Effectiveness Metrics.

Keyword : NetSupport School 10, ISO / IEC 9126-4 Effectiveness Metrics.

#### INTRODUCTIONS

Teaching and learning activities in the computer lab, in the school environment and higher education, teaching and learning process in the laboratory have problems in monitoring student computers in the computer lab during school hours and lasted less conducive classroom when the teacher explains.

attention to the problems that exist when a computer lesson progresses, many laboratories implement systems NetSupport School 10 is often referred to NSS 10 in its aim to create a conducive classroom lessons.

Computer technology is the application of NetSupport School 10. NetSupport School 10 Concept is a concept where teachers can monitor any application or site is in open students.

However, many users do not know the exact effectiveness of the software, so the need for an evaluation of the effectiveness of the software that will be useful to the users for the development of technologies and systems in use today.

The study will measure At the effectiveness of NetSupport School 10 by Standard ISO / IEC 9126-4 Effectiveness Metrics. So the research conducted to provide answers to questions will be the effectiveness of using NetSupport School 10. In accordance with some of the problems that had previously didefinis as yet learned the effectiveness of the system NetSupport School 10, has never been done measuring the effectiveness of the use of NetSupport School 10 according to 2<sup>nd</sup> International Conference on Engineering and Technology Development (ICETD 2013) Universitas Bandar Lampung Faculty of Engineering and Faculty of Computer Science

Standard ISO / IEC 9126-4 Effectiveness Metrics, unfavorable classes take place during school hours, the instructor is difficult to monitor praktikan activities take place during school hours.

If these aspects in an effective software criteria in use are met, then a valuable software to meet the needs.

#### NetSupport School: Classroom Instruction & Management

NetSupport School is the class-leading training software solution, providing teachers with the ability to instruct and visually/audibly monitor, as well as interact with their students, individually, as a pre-defined group or to the whole class.

Rising to the challenge and requirements of today's modern classroom, NetSupport School provides the ability to deliver lesson content, simultaneously monitor all student PCs and work collaboratively, ensuring that complete student attention and focus is maintained at all times. There are no hidden extras, all features are included as standard including а customised testing suite. dedicated digital technician console, student revision aids, lesson planning tools and the option for teachers to reward students for good effort.

Found By NetSupport School NetSupport NetSupport Limited Or Now Called Inc.. In Peterborough UK In 1989. Technology combines advanced PC monitoring, realtime presentation and Annotation tools, with an innovative customized with Internet Testing, suites and control applications, real-time audio monitoring, automated Lesson Plans, Printer Management, Instant Messenger control, Content Monitoring and Desktop Security , the latest version of NetSupport School is growing into the challenges and requirements of the modern classroom.

#### ISO/IEC

ISO (International Organization for Standardization) ISO First established in Geneva, Switzerland, in 1947. ISO is the world standards body formed to improve the international trade-related goods and services changes. ISO can be summed up as the coordination of international labor standards, international harmonization of standards publication, and promotion of international standards. use of the IEC (International Electrotechnical Commission) is an international standards organization that prepares and publishes international standards for all electrical and electronic technology. ISO and IEC form the specialized system for the entire standardization in the world. ISO or IEC joined in the development of International Standards through technical committees established by the respective organization to deal with particular areas. ISO and IEC collaborate in certain areas for the good. Other international common organizations, governmental and nongovernmental, in liaison with ISO and IEC, also take part in the standardization work.

#### ISO / IEC 9126

ISO / IEC 9126 Software Engineering -Product Quality is an international standard for evaluating the software quality. The fundamental objective of this standard is to overcome some of the prejudices well known that humans can influence perceptions of project delivery development. and software The international standard is divided into 4 sections namely Model Quality (ISO / IEC 9126-1), External Metrics (ISO / IEC 9126-2), Internal Metrics (ISO / IEC 9126-3), the use of quality metrics (ISO / IEC 9126 - 4).

External Metrics, Metrics Internal, and

use quality metrics have relationships with each other as



#### fig 1. Metrics

#### ISO / IEC 9126-4

ISO / IEC 9126-4 Use of Quality Metrics used to measure the extent to which a product meets the requirements specified users to achieve specified goals. Metrics is a unit for measuring software. In the ISO / IEC 9126-4 are metrics of effectiveness, safety, productivity, and satisfaction in a specified context of use of quality metrics. Quality in

|                                  | Pupose d'Ite<br>métics   | Nettod of<br>application | Veasurement formula and<br>data element computations  | hervestor st<br>nessuedvake  | Netic scale<br>type        | Vesue<br>lyze  | irputita<br>reasuene   | 12207  | Target<br>autience                                     |
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use is not only dependent on the software

product, but also on the specific context in which the product is being used. Context of use is determined by the user factors, task factors and physical and social environmental factors. Quality used was assessed by observing representative users perform tasks in the context of a realistic representation use

#### Metric ISO / IEC 9126-4

Metric is a measurement scale and the method used for measurement. In the ISO / IEC 9126-4 are 4 metrics, namely:

#### 1. Effectiveness

Effectiveness metrics measure the accuracy and completeness with which goals can be achieved.

#### 2. Productivity

Measure of productivity related to the level of effectiveness achieved to the expenditure of resources. Relevant resources may include mental or physical effort, time, material or financial costs.

3. safety

Security measures related to operational risk software products from time to time,

conditions of use and the context of use. Safety can be analyzed in terms of operational safety and safety contingency. Operational safety is the ability of the software to meet the

needs of users who are normal during operations without endangering other resources and the environment. Safety contingency is the software's ability to operate outside the normal operations and divert resources to prevent the escalation of risk.

#### 4. Satisfaction

Satisfaction measures the extent to which users are free from discomfort and their attitudes towards the use of the product. Satisfaction can be defined and measured by subjective judgments on a scale such as: high qulity for the product, satisfaction with the use of the product, revenue workload when performing different tasks, or the extent to which a certain quality in use objectives (such as productivity or ability to learn) have been met.

#### Result

Questions Design for get effectiveness software using Metrics Effectiveness **ISO/IEC 9126-4** 

| No | Pertanyaan  | Hasil              | <b>1.</b> Analy<br>This calcul  |
|----|---|--------------------|---|
| 1  | Is there a component of<br>Net Support School 10 is<br>not appropriate when it is<br>run?       | frequency<br>Error | IEC 912<br>subcharact   |
| 2  | How many times have you<br>made a mistake while<br>using the software Net<br>Support School 10? | frequency<br>Error | $\begin{array}{c} \text{data el} \\ \text{M1} =   \\ \text{Ai} = 0 \\ \text{compo} \\ \text{Thus,} \\ \text{M1} =   \\ \end{array}$ |
| 3  | How long is the software<br>Net Support School to<br>finish the job?                            | Task completion    | Bound<br>close t<br>better.<br>task ha  |
| 4  | How many times Software   | Task               | In this method  |

|   | Net Support School to finish the job?                                | completion            |
|---|--|-----------------------|
| 5 | How does your work after<br>using Software Net<br>Support School 10? | effectiveness<br>Task |

#### Analysis Techniques

The analysis techniques are in use in this study contained in ISO 9126-4 on the use of quality measures:

#### 1. Effectiveness metrics

Effectiveness metrics assess whether the tasks done by users achieve specific goals with

accuracy and completeness in the particular context in use. Effectiveness divided like at the table

| of<br>0 is<br>it is | Hasil<br>T<br>i<br>I<br>frequency<br>Error | <b>1. Analysis of Interview Results</b><br>This calculation is based on the results of<br>nterviews Effectiveness metrics in ISO /<br>EC 9126-4. Inside there are 3<br>ubcharacteristric metrics, namely |
|---------------------|--|--|
|                     | 1  | . Task effectiveness<br>Using the method of calculation of   |
| e you<br>t          | frequency<br>Error                         | data elements:<br>$M1 =   1-\Sigma Ai   1$<br>Ai = 0 (there is never a wrong<br>component output current task)<br>Thus,<br>M1 =   1-0   = 1  |
| vare                | Task<br>completion                         | Boundary = 1, so that the results are<br>close to 1 is the result of effective or<br>better. Thus the effectiveness of the<br>task has been good or effective.<br>. Task completion                      |
| ware                | Task                                       | In this subvariabel data element<br>method calculation:<br>X = A / B   |

Assignment A = 8, B = 8 tasks Thus, X = 8/8 = 1Results 1 is closest to the most effective results or better. Therefore Completion Task software NetSupport School 10 is Effective.

3. Frequency Error

$$X = A / T$$
  

$$A = 0, T = 8$$
  
Thus,  

$$X = 0/8 = 0$$
  
The results were most close to 0 is the  
best result, and therefore Frequency  
Error software NetSupport School 10  
It's effective.

#### Discussion

Results Software NetSupport School 10 is based on ISO / IEC 9126-4 from interviews with User Server (Operator).

| Quality of Use         |            |                       |                  |  |  |  |
|------------------------|------------|-----------------------|------------------|--|--|--|
| Effectivenes s metrics | Resul<br>t | Level<br>s in<br>Need | observation<br>s |  |  |  |
| Task<br>effectiveness  |            |                       |                  |  |  |  |
|                        | High       | High                  | Effective        |  |  |  |
| Task completion        | High       | High                  | Effective        |  |  |  |
| Frequency<br>Error     | High       | High                  | Effective        |  |  |  |

#### Reference

- AZUMA, P. M. (2007). ISO/IEC 9126-4 : Software Engineering -Software product quality - Part 4 : Quality in use metrics.
- 2. Information Technology Service (2007), Using NetSupport Scholl on the ITS Networked PC Service, Durham University,



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