INTERNATIONAL CONFERENCE

ENGINEERING & TECHNOLOGY DEVELOPMENT

UBL ICETD

2013

The Second International Conference on
Engineering and Technology Development

2ⁿᵈ ICETD 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

2ⁿᵈICETD 2013

The Second International Conference On Engineering And Technology Development

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

PROCEEDINGS

Organized by:

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 (2ⁿᵈ 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

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The E-internal audit iso 9001:2008 based on accreditation form assessment matrix in study program for effectiveness of monitoring accreditation

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Abstract-*Accreditation is one of the form external quality guarantee system, it is a process that used in authorized institution in giving formal recognition that an institution has an ability to do certain activity. On the pepare processing there is some things that should be done by study program by using internal audit in periodic time. Internal audit is an independence activity, objectivity, and consultative which is designed to increase the organization's operation This scientific Writing will specifically focus on internal process audits in preparation for accreditation of Information Engineering Study Program at Bandar Lampung University with doing monitoring directly that can be accessed by some units in a management system based on guidelines and standards for internal audit issued by one of several organizations ISO, the quality management system ISO 9001: 2008, one of the requirements that must be fulfilled conduct periodic internal audits. This standard is very good when applied in the preparation of the accreditation process, accreditation assessment matrix as a guide in conducting internal audits.*

Keywords: *Accreditation, ISO 9001:2008, Internal Audit*

INTRODUCTION

Accreditation is a form of external quality waranty system, it is the process that used in authorized institution in giving formal recognition that an institution has the ability to perform certain activities.

Thus, accreditation protect the public from fraud by parties who are not responsible. The characteristics of accreditation is the hallmark assessment by experts from outside that relevant institutions (external peer reviewers), and conducted by volunteers, for college organized a course of study. This activity begins by conducting a self-evaluation (self-evaluation) of the various / components of inputs,the process and product from the study program that want

to be accredited must submit its report to the accessors institution.

In accreditation preparation process there are some things that are done by one of the study program is periodically conduct audits, audit activity is an independent, objective and consulting designed to add value and improve an organization's operations. This is help the organization to achieve its purpose systematicly, disciplined approach to evaluate and improve the effectiveness of risk management, internal control, etc.

But in the audit process in preparation for accreditation find some obstacles such as the company did the audit only as the madatory, without any the direct monitoring that can be accessed by multiple units within the management system. Other issues of monitoring and updating of data from internal audit,

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which has been done with paper base, so that the consumption of paper for every invention and audit results and the report is presented in the form of printed reports. Guidelines and audit standards given by several organizations and one of them is ISO, on the quality management system ISO 9001: 2008 one of the requirements that must be fullfilled periodically internal audits. This standard is very good when applied in the preparation of the accreditation process, accreditation assessment matrix as a guide in audit conducting.

From the arise problems then arise some ideas to make the audit process easier to do, such as with audit implementation into electronic form, where updating the data and reports and the system process that is done by website media, so it can increase effectiveness of audit activity monitoring, updating data faster and more efficient in the preparation of reports that do not need a lot of resources.

PROCEDURE

This observation formulates the problem is how to compose e-Internal Audit ISO 9001:2008 Accreditation Forms-Based Matrix Assessment Study for Effectiveness Monitoring Program Accreditation which aims to:1. Testing the mapping between the standard ISO 9001:2008 and form accreditation of bachelor degree study program

2. ISO 9001:2008 audit evaluates the matrix-based assessment accreditation forms with monitoring effectiveness assessment study program accreditation forms.

By implementing the ISO 9001:2008 standard accreditation forms study program and it must be done measuring use ISO 19011:2005 and the function of monitoring the effectiveness of accreditation, which is described in the internal model of the integrated audit of ISO 19011:2005 ISO 9001:2008 & BAN PT following: Picture.1 Model integrated internal audit ISO 19011:2005 ISO 9001:2008 & BAN PT
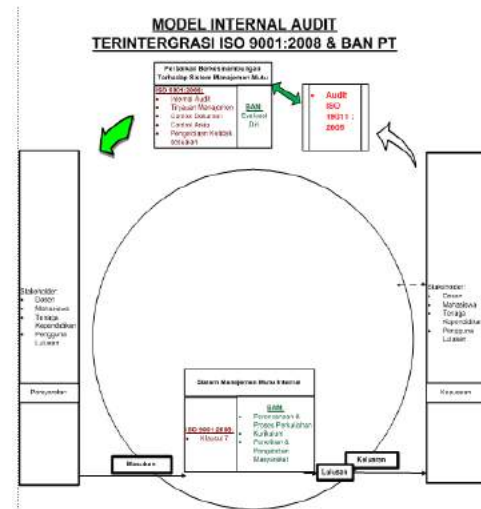
TECHNICAL ANALYSIS

Analysis and observation measuring use the method of comparative / comparisons that can be used to test the suitability of the difference in an experiment of output on a process. If it has an impact on the experimental results (experimental purposes), so it will seen a the significant difference, using the following equation:

$$vt = \sum_{i=1}^{n} Capai_i * Bobot_i$$

$$S = \sum (vt_1 - vt_2)$$

$$Peningkatan = \left(\frac{S}{vt_1}\right) * 100\%$$

THE RESULT

In this observation developed software that adopt the audit process that used in quality management system. The actor's

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involvement with the system shown in picture2.
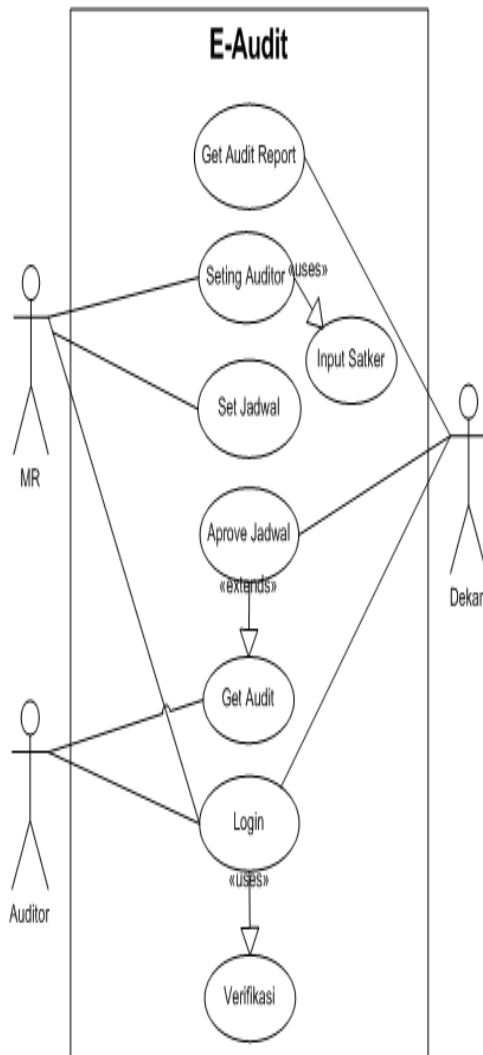
Picture 2. Use Case

In picture   Use case the actors that involved in the system is the Management Representative (MR) is an actor who plays a role regulating the audit process and controlling those activities in order to run as a standard procedure in force. MR in the quality management system is the chairman of quality waranty. While Dean is as the responsible management member and also as   the peak/main management at faculty level. While the auditor is an actor who performed an audit or as actors who carry out the whole process level courses in study program level.

Programming algorithm on e-audit process flow depicting the big outline on the application audit that listed on the pseudocode that is refered to others . Globally pseudocode application in this observation is illustrated in picture 3.

THE IMPLEMENTATION

This observation uses a the implementation of software e-audit:

1. GUI Login

Gui login is interface that is used for validation of the parties has the right to be

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able to go in and be able to use all the facilities that exist in the system.

picture.3: GUI Login

2. GUI Satker

GUI Satker is interface that used to provide input ideas to system-related parties, on this page, just fill the system on administrator membership such as number, name and unit of work, where do members workers.

picture.4. GUI Satker

3. Standard GUI

Standard GUI is the interface to give inform to the system about every standard that available on the standard accreditation forms and also the weight of scorring on every standard that has been taken from the accreditation assessment matrix.

picture.5 GUI Standards

4. GUI Auditor

Is the interface to form auditor groups of that is involved with each corresponding positions are determined by the representative management.

Picture .6 GUI Auditor

5. GUI Schedule

GUI schedule is used to provide audit schedule that is done based on agreement between the lead of author and other parties that will be audited.

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Picture .7 GUI Schedule

6. GUI Findings

GUI Findings is interface that give suggestion to the system because of invention that available on audit process.

Fig.8 GUI Findings

7. Detailed Findings GUI

Is the interface that details the findings of the audit process on the level of each item audited standards. By performing calculations based on the existing achievements, calculated based on the weight of each item in accordance with standard valuation metrics.
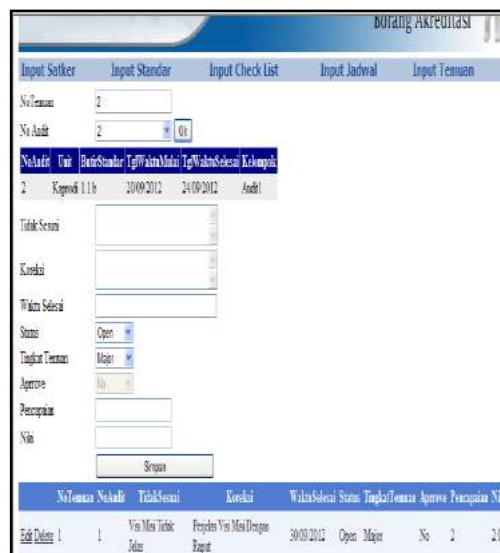
Fig.9. Detailed Findings

8. GUI Print Report

Interface is displayed to print the audit report.

Fig 10. Print Reports

with two implementation, By doing measuring the difference between the implementations I and Implementation II, and the result is in table 1 and table II

Table 1. Implementation I

N o.	No. Butir Penilaian	Aspek Penilaian	Pencapaian	Bobot	Nilai*
1	1.1.a	Tertera	3	1.04	3.12
2	1.1.b	Tertera	3	1.04	3.12
-	-	-	-	-	-
-	-	-	-	-	-
98	7.2.2	Tertera	3	1.88	5.64
99	7.3.1	Tertera	4	1.88	7.52
10 0	7.3.2	Tertera	4	1.88	7.52
Total					246.3
Nilai Akhir :					**184.7**

Table Implementation II

Analysis and research using the method of comparative / comparisons that can be used to test the suitability of the difference in an experiment on the output of a process. If it has an impact on the experimental results (experimental purposes), so it will seen a significant difference as shown in table 4.

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No.	No. Butir Penilaian	Aspek Penilaian	Pencapaian	Bobot	Nilai*
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-	-	-	-	-	-
98	7.2.2	Tertera	4	1.88	7.52
99	7.3.1	Tertera	4	1.88	7.52
100	7.3.2	Tertera	4	1.88	7.52
Total					335
Nilai Akhir :					251.3

Uraian	Implementasi I	Implementasi II
Total nilai	246.3	335
Nilai akhir	184.7	251,3

X = Implementasi II - Implementasi I   (1)

Peningkatan = X /Implementasi I * 100   (2)

Maka hasil komparasi adalah sebagai berikut:
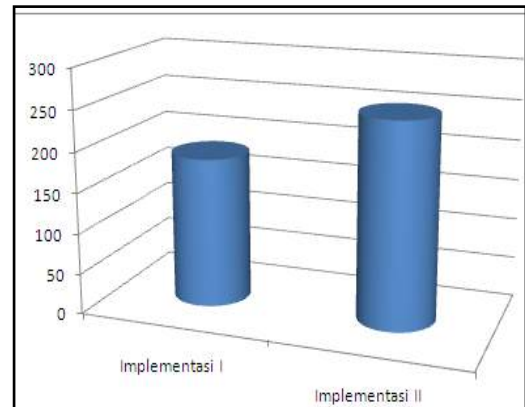
X = 251.3 -184.7

           = 66.6

Peningkatan   = 66.6/184.7 * 100

           = 36.058%

So it can be seen improvement using the graph in picture 11.

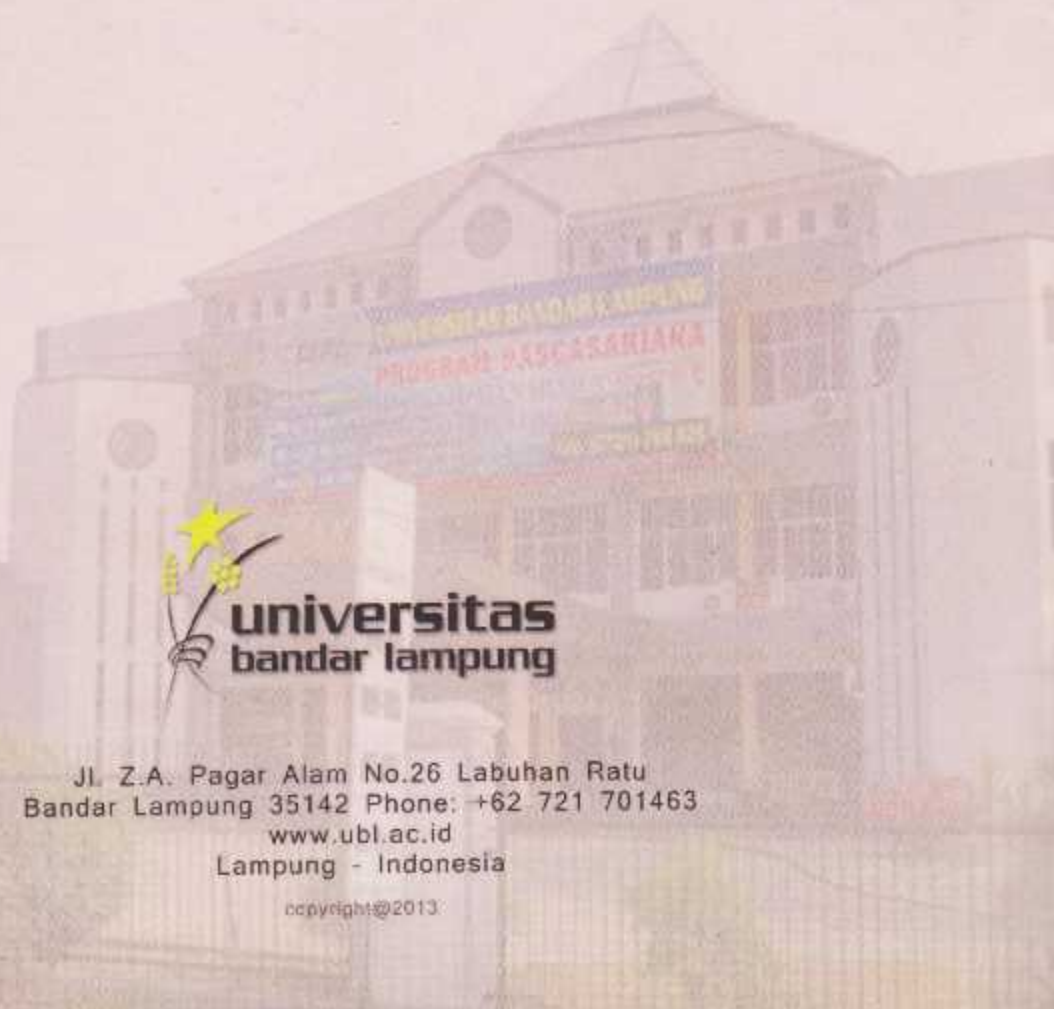Picture 11. Comparison Charts

CONCLUSION

After analyzing the results of the implementation I and implementation II, this observation find some important invention that can be formulated on the conclusion, such as:

1. Improved assessment (final grade) in this observe showed an increase in the value of the accreditation is 36 058%.

2. The application of e-assessment matrix accreditation forms can increase the effectiveness of monitoring accreditation S1.

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