

# **ENGINEER SERVICE REPORT SYSTEM**

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Engineer service report system / Nur Arina Mohd Yasin.

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**This report is submitted in partial fulfillment of the requirement for  
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## ABSTRACT

Engineer Service Report System (ESRS) is an enhancement initiative idealized from the current system used by the engineers in the Technical Division of CHASS Computer Consultant Sdn. Bhd. It is used as the company's service reporting application. This system stores the essential records of the services that have been carried out by the engineers. Individual service report can be viewed here but the report owner can only do alterations of the service report. This is to address data integrity of the records. A summary view of the services that has been delivered to customer can help in certain decision making such as the balance hour indicating whether a company needs to be prompted on whether to renew its contract of purchased service hour. The system will minimize the problem faced by the engineer in the process of service reporting. In developing the system, an RUP approach is used while an object oriented concept and technique is chosen. Testing are done in two ways that is the black box testing and white box testing all done at the developer's site.

## ABSTRAK

Engineer Service Report System (ESRS) merupakan usaha penambahbaikan daripada system sedia ada yang digunakan oleh para jurutera di Bahagian Teknikal, CHASS Computer Consultant Sdn. Bhd. Sistem ini digunakan terutamanya dalam melaporkan perkhidmatan yang diberikan kepada pelanggan. Sistem ini menyimpan butir-butir penting tentang perkhidmatan yang diberikan kepada pelanggan. Laporan-laporan perkhidmatan dapat dipaparkan secara individu tetapi sebarang perubahan hanya dibenarkan jika pengguna tersebut adalah pemilik laporan. Ini bagi memastikan kebolehpercayaan terhadap rekod-rekod yang disimpan. Paparan rumusan kepada perkhidmatan yang telah diberikan kepada pelanggan dapat dilihat pada sistem ini. Paparan ini sebenarnya membantu dalam memutuskan cadangan-cadangan yang dapat melicinkan kerja para jurutera CHASS. Sistem ini secara tidak langsung membantu mengurangkan beban kerja para jurutera. Dalam implementasi sistem, ia menggunakan pendekatan RUP (Rational Unified Process) dan menggunakan metodologi berorientasikan objek. Pengujian dilakukan dalam dua keadaan iaitu pengujian “black box” dan pengujian “white box” semuanya di lokasi pembangunan sistem.

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## LIST OF ABBREVIATIONS

### ABBREVIATION

ESRS	ENGINEER SERVICE REPORT SYSTEM
KUTKM	<i>Kolej Universiti Teknikal Kebangsaan Malaysia</i>
SPS	SUPPORT PACK SYSTEM
PSM	<i>Projek Sarjana Muda</i> (Final Year Project)

## CHAPTER 1

### INTRODUCTION

#### 1.1 Project Background

Engineer Service Report System (ESRS) is an essential system within the Technical Department which provides the engineers services details to its customers. The records are also used in evaluating the engineers' performance. The hours performed as service to customer is calculated to provide the balance of hours left according to the hours of services agreed to in the stated contract. This information is critical for the business processes of CHASS in providing a better service to its customers.

The founding purpose of the current ESRS are quoted as increased efficiency in storing data, effectiveness in providing data integrity, helping the engineers to search their service reports easily, user friendliness and appealing to first time users. Unfortunately some of these features are yet to prove its purposes. Due to this issue, an enhancement of the current ESRS should take place before any problem regarding the current business flow of the engineers' surfaces.

The enhanced ESRS will fulfill the engineers' requirement in providing a better platform of data entry and source of information. Engineers can get information regarding the services given in a wider searching format. Security and report maintenance issues are handled with proper authentication (login id). An element of DSS is also included in relation to the charges upon engineers' services.

## 1.2 Problem Statements

This section is important to highlight the problem faced in the current system. It covers problem relating to system functionality, design and business process. The ESRS will always be significant to the company as Bennett et. al. (2000) mentioned “building computerized information system can be viewed as a form of problem solving”. The followings are the problem statement for the current ESRS.

- i. **Login does not require password from user**  
Logging in without password can pose issues like unauthorized modification. Engineers are assigned an ID that allows them to modify their own service report.
- ii. **The service report does not provide field assistant**  
Field guides are not provided as help for engineers to key in the correct input for the first time and just validation message appear to inform of an error. This is even more difficult when the correction is not shown and the error is not mentioned specifically.
- iii. **Difficult to administer records by engineers**  
System does not have an administrator view whereby all the records are viewed as per engineers’ records and modification can only be done by engineers login per record.
- iv. **Printing setting need to be renewed**  
Setting of the printing page is only limited to one page of printing. Multiple report printing is not provided as an option.

v. **Searching option should provide broader query function**

Instead of an exact report number, user should be able to view the reports that fulfill the search statement such as searching by company, month, engineer and year.

vi. **Service Charges are determined by engineers**

Based on hours spent at customer site, engineers key it into the system and also the value of charges. Issue of transparency arises in determining the charges that is currently being keyed in by the engineers.

### 1.3 Objective

The future enhancement of ESRS will emphasize on improvement of the business process of the company. Hence it will abide certain objectives, which are as follows:

- i. To keep track of engineer service report for recording by providing a proper view of reports by company;
- ii. To have security control to ensure data integrity as in authorization of administrator and user;
- iii. To simplify searching for engineers report records to seek out information on services given by various searching options;
- iv. To fully utilize the system capability to provide well-presented information essential for the business decision-making plan as in the monthly service report; and

## 1.4 Scopes

There are certain scopes that a project must cover. In the engineer service report system context, the scopes being addressed to develop an enhanced Engineer Service Report System are as follows:

- i - This system is only used by the Technical Department of CHASS Computer Consultant staff;
- ii - This system contains 6 modules that are search, view, add, delete, update and print functions;
- iii - An element of DSS is included in determining the charges;
- iv - This system will have an administrator login which will have full access and grants to the reports recorded by engineers. The administrator login enables user to perform insert, delete and update function;
- v - The searching process is by company, date of report, report id, staff, status of service and type of service given; and
- vi - The system can print reports accordingly.

### **1.5 Project Significance**

The enhanced ESRS will definitely benefit the deployment engineers at CHASS Computer Consultant Sdn. Bhd. Through the system, the engineer's task of providing information regarding services given to customer is simplified and properly recorded. Information regarding the service reports is easily retrieved from the system. Modification will only be valid for the engineer authorized and the administrator providing record integrity.

CHASS Computer Consultant will have an application system integrating most of the currently functions in a single application rather than different application system to cater its service reporting business process. This will ensure the server capacity is used wisely for the Technical Division.

### **1.6 Expected Output**

Expectation for this application enhancement of ESRS is both technically and functionally. Technically the ESRS will handle the record keeping of the company, which is currently done both in manual and digital. Manual record still requires physical space for storage. Enhancing the ESRS will increase the engineer's trust towards the system integrity making it reliable to provide information.

Functionality of the system is the most important issue in bringing up the enhancement of ESRS. Reviews on the engineer's requirements and the details of data to be stored into the Technical Division database will produce a better layout for record storage. Managing important records will fully utilize the server performance.



Design is also an important matter towards a better performance at the end-user view. In this project, system interface issues an important role to provide engineer the best view of the system apart from a functioning one. Other than the interface design to be considered in the process of enhancing is the database design which will be discussed in the following chapters.

## **1.7 Conclusion**

Application system has been much of help to cater in-house business processes. ESRS has been used to collect data and analyze information regarding the service report given by the engineers to its customers. This system will ensure that the enhanced features will function as its founding purpose. Using the appropriate methodology will guide the process of enhancing ESRS. Project schedule and milestone will ensure important deliverables produced in a systematic approach. This chapter will be followed by Chapter II which the literature review and project methodology.

## CHAPTER II

### LITERATURE REVIEW AND PROJECT METHODOLOGY

#### 2.1 Introduction

This chapter will elaborate deeply on the literature review and project methodology. It starts with the second section on fact and finding; discussing on the research and summarization of previous similar efforts regarding the development of application system. It also opens the discussion on the current system study. This section is followed by the justification on the project methodology which uses the RUP approach of the object oriented analysis and design. The fourth section elaborates more on the project requirement consisting of software, hardware and other requirement deemed necessary.

#### 2.2 Fact and finding

ICT has been an important element in business nowadays. The experience of certain countries suggests that the prevalent and effective usage of ICT by businesses have helped to improve the productivity of the economy (Abas, 2005).

In this section, the findings are on the justification of the responsibility of information system to business. The enhancement of ESRS relates itself the