2013

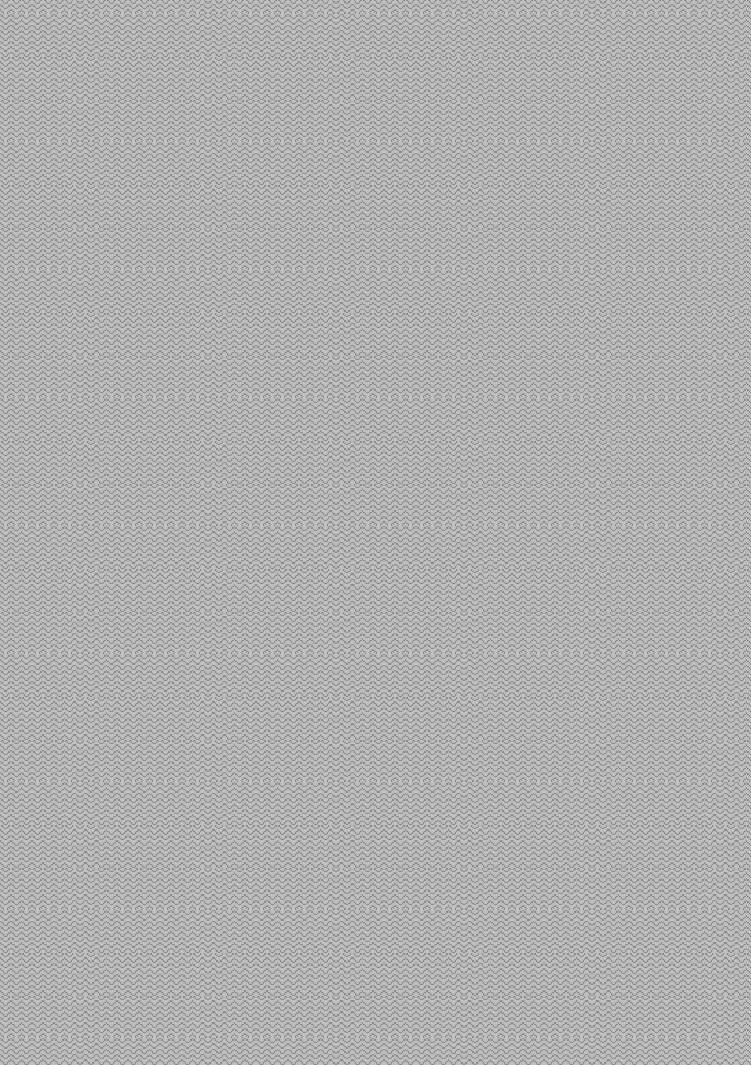
SOFTWARE

DEVELOPMENT PLAN

(SDP)

COMPOUND SYSTEM UMP (COSYS)

NORUL HUSNA BT OTHMAN (CB13008)



**SOFTWARE DEVELOPMENT PLAN (SDP)** FSKKP

**MBER VERSION NUMBER (*Example SDP ABC 2008 VERSION 1.0*)** i

KAMAL WAL MUKAMMAL BIN ABD RAHIM (CB13015)

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[SKITZA CORP]

To be submitted to the Software Planning & Requirement Workshop

Bachelor of Computer Science (Software Engineering)

**DOCUMENT APPROVAL**

|  |  |  |
| --- | --- | --- |
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| **Authenticated by:**  Project Manager | Norul Husna Binti Othman | 6/12/2013 |
| **Approved by:**  Client | En. Mohd Izham Bin Ibrahim |  |

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Hardcopy – 8 Set

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**1. INTRODUCTION**

* 1. **PROJECT IDENTIFICATION**

System Title: Compound System UMP

System Abbreviation: COSYS

System ID: SKITZA – COSYS – 01

* 1. **PROJECT OVERVIEW**

**1.2.1 Project Summary**

This section of the document is an introduction SKITZA Corporation proposal to complete the software development portion of the Compound System UMP (COSYS) project. It will describe the objective that are to be accomplished, the software to be delivered that underlie the effort and the deliverables that will be produced by the project.

**1.2.2 Objectives**

The objectives of the project are as follows:

1. COSYS system to eliminate redundant data entry throughout the organization.
2. COSYS is enables admin to manage summon data.
   * 1. **Software to be delivered**

The table below indicates all the software that will be used to build the Compound System in UMP (COSYS).

**Table 1.1** Software to be delivered

|  |  |
| --- | --- |
| **Software** | **Purpose** |
| Microsoft Windows Operating System  • Windows 7 Professional | • As a platform for a system to run  • Operating system which will be used to develop the system |
| Microsoft Office  • Microsoft Word 2007 & 2010  • Microsoft Project 2007  • Microsoft Visio 2010 | • Prepare proposal and documentation  • Create Gantt Chart  • Design and draw chart and diagram |
| Relational Software Architect | • Design and draw use case and sequence diagram |
| Adobe Dreamweaver CS4, Notepad C++,  Adobe Photoshop | • Design interface and generate coding |
| MySQL, PHP myadmin, Cpanel | • Database for the system; generate database, database management and database platform |
| WinRAR | • Compress project files |

* 1. **PROJECT DELIVERABLES**

**Table 1.2** Project Deliverables

|  |  |  |
| --- | --- | --- |
| **Product** | **Delivery Date** | **Delivery Method** |
| Initial plan | 11/11/13 | Hardcopy |
| Software Requirements Specifications (SRS) | 20/11/13 | Hardcopy |
| Software Development Plan (SDP) | 23/12/13 | Hardcopy |
| Database | 12/2/14 | CD |
| System (Source and Object Code) | 12/3/14 | CD |
| Software Testing Descript | 26/3/14 | Hardcopy |
| System Launching | 30/4/13 | CD |

**1.4 REFERENCE MATERIALS**

***1.4.1 Software Requirements Specification (SRS)***

Version 0.1

Date May 5, 2004

Author Harry Patel

Access information \\PROJECTS\NNBATM\SRS\0.1.doc

Publisher Matthew Buckley-Golder

***1.4.2 Software Design Specification (SDS)***

Version 0.1

Date May 5, 2004

Author Alfred Lim

Access information \\PROJECTS\NNBATM\SDS\0.1.doc

Publisher Matthew Buckley-Golder

***1.4.3 Software Test Plan (STP)***

Version 0.1

Date May 5, 2004

Author Alex Wong

Access information \\PROJECTS\NNBATM\STP\0.1.doc

Publisher Matthew Buckley-Golder

***1.4.4 Software Quality Assurance Plan (SQAP)***

Version 0.1

Date May 5, 2004

Author Mark Owen

Access information \\PROJECTS\NNBATM\SQAP\0.1.doc

Publisher Matthew Buckley-Golder

***1.4.5 Software Configuration Management Plan (SCMP)***

Version 0.1

Date May 5, 2004

Author Sarah Schmidt

Access information \\PROJECTS\NNBATM\SCMP\0.1.doc

Publisher Matthew Buckley-Golder

***1.4.6 Software Verification and Validation Plan (SVVP)***

Version 0.1

Date May 5, 2004

Author Alex Wong

Access information \\PROJECTS\NNBATM\SVVP\0.1.doc

Publisher Matthew Buckley-Golder

***1.4.7 Quality Software Project Management***

Futrell, R. T., Shafer, D. F., Shafer, L. I. (2002). *Quality software project management* . Upper

Saddle River, N.J.: Prentice Hall PTR.

***1.4.8 Compound Notice UMP***

Universiti Malaysia Pahang Notis Kompaun Bagi Kesalahan-Kesalahan

Dibawah kaedah-Kaedah Kolej Universiti dan Teknologi Malaysia(Tatatertib Pelajar)

2003

**2. SOFTWARE DEVELOPMENT MANAGEMENT**

**2.1 PROJECT ORGANIZATION AND RESOURCES**

**2.1.1 Project Organizational Structure**

|  |
| --- |
| STEERING COMMITTEE  NORUL HUSNA BINTI OTHMAN |

|  |
| --- |
| PROJECT DIRECTOR/WORKING COMMITTEE  KAMAL WAL MUKAMMAL BIN ABDUL RAHIM |

|  |
| --- |
| PROJECT MANAGER  NORUL HUSNA BINTI OTHMAN |

|  |
| --- |
| COMPANY CO-ORDINATOR  KAMAL WAL MUKAMMAL BIN ABDUL RAHIM |

QUALITY ASSURANCE MANAGER

QATHRATUN NADA BINTI ALI

SOFTWARE DESIGNER

GRACE SHEELA A/P MOGAN

BUSINESS ANALYST

NUR SYUHAIDAH BINTI ISMAIL

SOFTWARE DEVELOPER

KAMAL WAL MUKAMMAL BIN ABDUL RAHIM

**Figure 2.1** Project Organizational Structure

**2.1.2 Internal Management Organizational Structure**

SKITZA Corporation (SKITZA Corp) was formed in October 2013. Our company located in University Malaysia Pahang, Lebuhraya Tun Razak, 26300, Kuantan Pahang. SKITZA Corp contains five members that is Norul Husna Binti Othman as a project manager, Nur Syuhaidah Binti Ismail as a business analyst, Kamal Wal Mukammal bin Abdul Rahim as a software developer, Grace Sheela A/P Mogan as a software designer and Qathratun Nada Binti Ali as a quality assurance.

**Figure 2.2** Internal Management Organizational Structure

**2.1.3 Organizational Boundaries and Interface**

**Table 2.1** Roles and Responsibilities

|  |  |  |
| --- | --- | --- |
| **Roles** | **Responsibilities** | **Name** |
| Project Manager | Responsible for planning execution, coordination of team members, communication with the acquirer , consultant and customer, closing of the project | Norul Husna Binti Othman |
| Business Analyst | Acts as a bridge between the business and IT, translating the business’s requirement into a form that can be understood by the system developer’s. | Nur Syuhaidah Binti Ismail |
| Software Designer | Responsible for making architecture, database, data, object and user interface design. | Grace Sheela A/P Mogan |
| Software Developer | Responsible for analyzing requirements, preparing documentation and implementing of the software. | Kamal Wal Mukammal Bin Abdul Rahim |
| Quality Assurance Manager | Ability for analyzing requirements of the products which meets with the specified requirements and customer expectations. | Qathratun Nada Binti Ali |

**2.1.4 Project Resources**

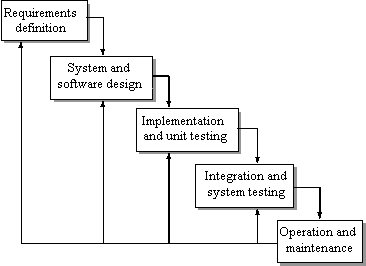
* Budget Allocation Plan

**Table 2.2** Budget Allocation

|  |  |  |
| --- | --- | --- |
| **Task Name** | **Duration (hour)** | **Costs (RM)** |
| **Project Management** |  |  |
| **Initial Plan** |  |  |
| Meeting with customer | 16 | 350.00 |
| Meeting with Acquirer | 40 | 400.00 |
| Preparation of Initial Plan | 50 | 100.00 |
| Revision of Initial Plan | 48 | 100.00 |
| **SDP** |  |  |
| Discussion about topic | 24 | 40.00 |
| Managerial Process Plan | 40 | 300.00 |
| Technical Process Plan | 56 | 200.00 |
| Supporting Process Plan | 64 | 100.00 |
| Preparation of SDP | 32 | 100.00 |
| Revision of SDP | 40 | 100.00 |
| **Risk Management** |  |  |
| Identification of Risk Factors | 48 | 500.00 |
| Analysis of Risk Factors | 96 | 600.00 |
| Prioritization of Risk Factors | 64 | 650.00 |
| Monitor of Risk Factors | 42 | 700.00 |
| **Requirement Analysis** |  |  |
| Discussion | 40 | 50.00 |
| Requirement Elicitation | 46 | 50.00 |
| Analysis of Requirement | 35 | 60.00 |
| Preparation of SRS | 50 | 100.00 |
| Revision of SRS | 25 | 100.00 |
| **Design** |  |  |
| Discussion | 40 | 50.00 |
| Gui Design | 50 | 1000.00 |
| **Data Design** |  |  |
| Data Structure Design | 80 | 1500.00 |
| Database Design | 50 | 1500.00 |
| Object Design | 50 | 1500.00 |
| Preparation of SDD | 70 | 100.00 |
| Revision of SDD | 25 | 100.00 |
| **Implementation** |  |  |
| Development of DB | 80 | 3000.00 |
| Coding | 95 | 5000.00 |
| **Testing** |  |  |
| Unit / Integration Testing | 80 | 800.00 |
| System testing | 40 | 1000.00 |
| Acceptance Testing | 55 | 500.00 |
| **TOTAL** | 1571 | 20,650.00 |

**2.2 PROCESS MODEL**

Throughout the whole software development process, our development team uses Waterfall mode. Waterfall process model is a linear model thus easy to be implemented. Deliverables are clearly seen throughout the whole development process, from each phase to the next phase. Documentations are produced at the end of every stage of waterfall model development which makes the product development is simpler.



**Figure 2.3** Waterfall Model

**Requirements definition**: Requirements and related information are gathered during this phase. The functionalities and constraints of the system are also determined to avoid future problems. Requirements are gathered from the end user through consultation to check for validity.

**System and software design:** System design helps to specify hardware and system requirements. Designing is also crucial to define overall system architecture. This must be done before proceeding with the real coding to avoid any useless mistakes happen in the next phase. System design documents are created at the end of the phase.

**Implementation and unit testing:** Implementation starts once receiving system design documents. Here, works are delegated in several main modules and actual coding is started. Each of the system part is developed and tested for its functionality. Unit testing will validate and verify as if the modules meet their specifications.

**Integration and System Testing:** In the previous implementation and unit testing phase, the units are developed and tested by modules for its functionality. In this phase, all the modules are integrated and tested as one complete system purposely to check as if the modules are coordinated between each other. Once successfully done, the system will be delivered to the customer.

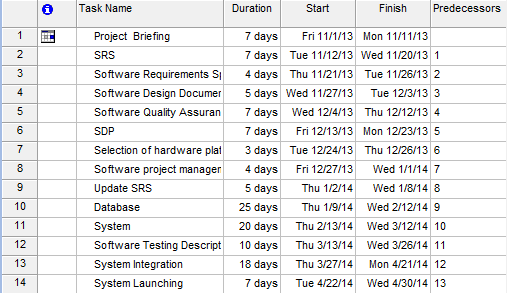
**Operation and Maintenance:** After the deliverables, any issues related to the system which unable to be found during the development process will be monitored and maintained by the developing team. Rare problems are hardly appear at the early deployment stage and they usually rise after some time, thus a continuous maintenance are needed to solve these problems.

**Why use waterfall model?**

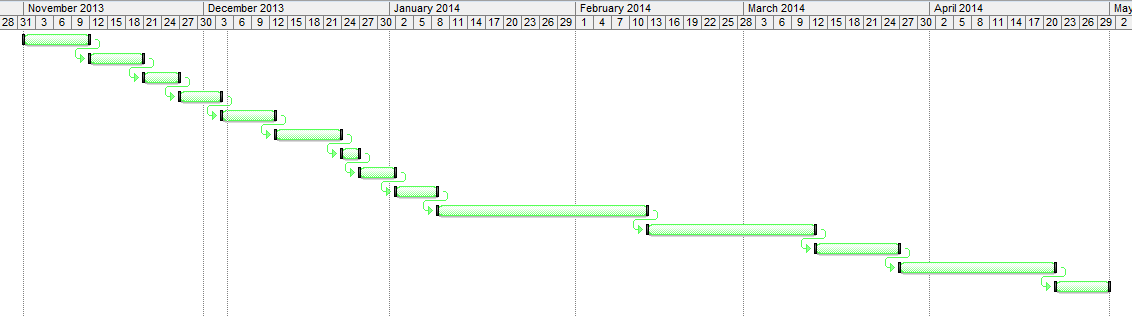
* Being a linear model, it is very simple to implement.
* The amount of resources required to implement this model are minimal.
* Documentation is produced at every stage of the software's development. This makes understanding the product designing procedure, simpler.
* After every major stage of software coding, testing is done to check the correct running of the code.

The entire storyline of the system will be finalized before the coding begins. Therefore we have a clear idea as to what we want. Moreover we would know how good our system is and what scenarios the system will be handling.

**2.2.1 Schedule and Gantt Chart**



**Figure 2.4** Schedule

**Figure 2.5** Gantt Chart

**2.3 RISK MANAGEMENT**

The purpose of the Risk Management is to identify, analyze and rank risk factors. Once factors have been identified then these will be analyzed for impact and consequences and ranked accordingly plans will be put in place for contingencies and tracking and control measures will be put in place. Risk management is an ongoing task, as influencing conditions a rarely stagnant during the course of the project.

**2.3.1 Risk Identification**

The risks will be listed, updated, and monitored in this section.

Risk # 1: The users of the application are not entirely sure what they want or need.

Risk # 2: The developers have little knowledge about compound management in UMP.

Risk # 3: The development of system lack of team member.

**2.3.2 Risk Analysis**

**Table 2.3** Risk Analysis

|  |  |  |
| --- | --- | --- |
| **RISKS** | **PROBABILITY** | **IMPACT**  **1(low) – 5(high)** |
| Quality of product documentation and coding are not suitable | %35 | 3 |
| Disagree between team members | %8 | 2 |
| Unavailability of team members | %8 | 2 |
| Timing Problem | %15 | 4 |
| Health problem | %35 | 1 |
| Mistake in coding | %15 | 4 |
| System may be not work | %15 | 4 |

* FEP Memory Overrun – In case the memory of the buffer is not enough for the amount of data that is being received, it would result in a memory over run of the Front End Processor. Due to its Severity is analyzed to be **High**. To avert this, we can increase the number of test cases to come up with an adequate buffer size. Also, prototyping would prevent this defect.
* Synchronization Issues – If the sender and the receiver are not synchronized, it could end up into retrieval of data loss. Thus its severity is evaluated to be **High**.

This fault can be avoided by proper simulation and reliable estimation.

* Security Risk – COSYS does not have auto logout. So other people can use the account if the user not logout from the system.
* Unsatisfactory GUI – The satisfaction of the user-friendliness of the GUI is an important requirement. There is a risk that the GUI would be substandard. Hence, the severity of this is **Moderate**.
* Cost Overruns – It is extremely important to complete the project in a timely fashion and within the allotted budget. Cost overrun could be fatal for the project. Thus, its severity is **High**.

**2.4 SECURITY AND PRIVACY**

In Compound System UMP (COSYS) user need to login first to enter the system. User need to key in their ID, password and select the categories. A strong password is an important protection to help user to secure their information.

* **Length –** Password must be at least eight (8) long.
* **Complexity -** Include a combination of at least three (3) upper and/or lowercase letters, unique symbols, and numerals.

**2.5 FORMAL REVIEWS**

In formal review, there are 3 evaluators that will review the SDP, which is Client, Senior Review and Peer Review. Therefore, the SDP document must be printed in three copies.

* Project Manager will start the formal review by introduce all team member including their position, and their role in this project.
* Project Manager will present every part in the SDP document.
* Then, the three evaluators will undertake the formal review. Each evaluator will give their comments on the SDP.
* All team member must write down all the comment from the evaluators in their own copy.
* Q & A session.
* End formal review.

**2.6 CORRECTIVE ACTION PROCESS**

**Backup Data**: How we backup our client database from lost data or costly system downtime.

* Optimizing the server for performance which includes, space management, monitoring memory usage, and diagnosing problems.
* Administering the server on a daily basis to ensure server availability and the ongoing health of the system.
* Disaster prevention and recovery including creating consistent backups and restoring databases in case of network, application, or hardware failure.

**Flow Chart**

Review the

Non conformities

Identify the root causes

of the nonconformitiesEvaluate the need for action

to ensure that nonconformities do

not recur

Evaluate the need for action

to ensure that nonconformities do

not recur

Determine and implement

Action needed

Record results of

Action taken

Not effective

Review effectiveness

of corrective action taken

Effective

**Figure 2.6** Flow Chart

**2.7 PROBLEM OR CHANGE REPORT**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Company Problem Change Report Form** | | | | | | | | |
| *Client’s Information* | | | | | | | | |
| Company |  | | | | | | | |
| Tel |  | | | Email | | |  | |
| *Problem/Change Information* | | | | | | | | |
| Project Name |  | | | | | | | |
| Types of Issues |  | Problem |  | Change request | | |  | Enhancement |
| Request Changes to(e.g. Design, Interface) | | | |  | | | | |
| Description Of Request Change: | | | | | | | | |
| *\*\*\*For Staff Only* | | | | | | | | |
| Originator |  | | | | | | | |
| Analyst assigned to the problem: | | | | | | | | |
| Date Assigned | \_\_/\_\_/\_\_\_\_ | | | Date Completed | | \_\_/\_\_/\_\_\_\_ | | |
| Problem Status: | | | | Approval ( ) Disapproval ( ) | | | | |
| Reason: | | | | | | | | |
| *Correction Information* | | | | | | | | |
| Corrector |  | | | | | | | |
| Correction Date | \_\_/\_\_/\_\_\_\_ | | Correction Time | |  | | | |
| Description of Solution Implementation | | | | | | | | |

**Problem Reporting Form**

**Figure 2.7** Problem Reporting Form

**Company Logo**



**Figure 2.8** Company Logo

**Company Name** : SKITZA Corp

**3. SOFTWARE ENGINEERING**

**3.1 SOFTWARE ITEMS**

**3.1.1 Software Items**

The table below indicates all the software that will be used to build the Compound System in UMP (COSYS).

**Table 3.1** Software Items

|  |  |
| --- | --- |
| **Software** | **Purpose** |
| Microsoft Windows Operating System  • Windows 7 Professional | • As a platform for a system to run  • Operating system which will be used to develop the system |
| Microsoft Office  • Microsoft Word 2007 & 2010  • Microsoft Project 2007  • Microsoft Visio 2010 | • Prepare proposal and documentation  • Create Gantt Chart  • Design and draw chart and diagram |
| Relational Software Architect | • Design and draw use case and sequence diagram |
| Adobe Dreamweaver CS4, Notepad C++,  Adobe Photoshop | • Design interface and generate coding |
| MySQL, PHP myadmin, Cpanel | • Database for the system; generate database, database management and database platform |
| WinRAR | • Compress project files |

**3.1.2 Hardware Items**

**Table 3.2** Hardware Items

|  |  |
| --- | --- |
| **Hardware** | **Purpose** |
| Laptop Computer | Device to develop and create the system |
| Server | To test and run the system in localhost |

**3.2 SOFTWARE STANDARDS AND PROCEDURES**

This section describes the software standards and procedures that has been use to develop the system.

**3.2.1 Software Development Methodologies**

The development methodologies that has been used are as stated below:

* Documentation Standard – BCS2333 documentation template
* Programming Language –
* Design Methodologies and Notations -

**3.2.2 Design Standards**

This section describes the design standards to be followed and applied

* Design of the system must follow the basic requirements of the Graphical User Interface (GUI) guidelines and rules.

**3.2.3 Coding Standards**

This section describes the coding standards to be followed and applied. The code shall follow at a minimum:

* Naming conventions for variables, parameters, packages, procedures and files.
* Standards for comments of each line of code.

**3.2.4 Testing Approach**

This section describes thetesting approach to be followed and applied

* In order to test and run the system in local host, you need a testing server such as Xampp or Wamp Server.

**3.3 SOFTWARE PRODUCT EVALUATION PROCEDURES AND TOOLS**

This section describes the approach to be followed for software product evaluation

**3.3.1 Evaluation Procedures**

This section will identify and describes the procedure that will be used to evaluate and inspect the software and associated documentation.

* Decision Analysis Spreadsheet

**3.3.2 Evaluation Tools**

This section will identify and describes the tools that will be used in the software product inspection

* Not Applicable

**3.3.3 Independence in Software Product Evaluation**

This section describes thedetail of software’s product evaluation procedures.

* Not Applicable

**4. SOFTWARE CONFIGURATION MANAGEMENT**

**4.1 CONFIGURATION IDENTIFICATION**

**4.1.1 Developmental Configuration Identification**

This section briefly describes the configuration development approach for the project. All team members will be involved in this part. Basically:

* Project Manager responsible for planning execution, coordination of team members, communication with the acquirer, consultant and customer, closing of the project.
* Business Analyst acts as a bridge between the business and IT, translating the business’s requirement into a form that can be understood by the system developer’s.
* Software Designer responsible for making architecture, database, data, object and user interface design.
* Quality Assurance Manager able for analyzing requirements of the products which meets with the specified requirements and customer expectations.
* Software Developer responsible for diagnose and fix any problems that might arise in a system, as well perform any maintenance.

**4.1.2 Identification Methods**

Configuration identification will be performed in three stages, as follows:

1. **Identifying**

The items to be placed under configuration control will be identified.

1. **Naming**

An identification system will be specified for assigning unique identifiers to each item under configuration control.

1. **Acquiring**

A procedure for placing items identified for configuration control into the appropriate library.

**4.2 CONFIGURATION CONTROL**

**4.2.1 Flow of Configuration Control**

Stakeholder

Requirement

Evaluation

Approval

Implementation

Yes

Yes

No

No

No

Request

**Figure 4.1** Charts for Configuration Control

**4.2.2 Review Procedures**

Configuration control will consist of the following mechanisms, as follows:

1. **Change requests**

Changes to a configuration item will be requested by customers to change management software.

1. **Change evaluation**

The impact of a chance to the configuration item will be evaluated, usually based on perceived risk vs. benefit with respect to budget, schedule and the impact on other configuration items

1. **Change approval/rejection**

Based on an evaluation of the change to the configuration item, permission to change the item will be approved or rejected by the Change Control Board (CCB).

1. **Change implementation**

If the change is approved, change to the configuration item will be allowed to take place.

**4.3 CONFIGURATION STATUS ACCOUNTING**

Not Applicable

**4.4 CONFIGURATION AUDITS**

This section will describe the schedule, resources, methods and procedures used to conduct project reviews and audits.

Since multiple project managers are referred to in the following tables, “COSYS Software Project Manager” will be used to refer to the project manager on the project described by this SDP.

The table headings are defined as follows:

* **Review/Audit**: the review/audit type described by the remaining columns in the row
* **Schedule**: the schedule basis for the review meetings
* **Resources**: the resources required to participate in the review
* **Method**: a characterization of what will be done in the review
* **Procedure** : how the review will be organized and communicate.

**Table 4.1** Quality assurance audits

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Review** | **Schedule** | **Resources** | **Method** | **Procedure** |
| Requirements peer  Reviews | Weekly, during  Requirements phase | SKITZA CORPORATION Software  Project Manager,  Requirements Analyst | Review current  state of in-progress  design documents,  document issues  that need resolving,  assign resolution,  and set schedule for  resolution. | 1. Resources booked by  Requirements Analyst  2. Documents to be reviewed  will be distributed at least  48 hours prior to the  meeting by Requirements  Analyst  3. Meeting held to review  requirements documents and  create issue resolution plan.  4. Requirements Analyst  distributes review summary |
| Design peer  Reviews | Weekly, during Design  phase | SKITZA CORPORATION Software  Project Manager | Review current  state of in-progress  design documents,  document issues  that need resolving,  assign resolution,  and set schedule for  resolution. | Meeting held to review  design documents and create  issue resolution plan.  Distribute review summary  to resources |
| Implementation  peer reviews | Weekly, during  Implementation phase | SKITZA CORPORATION Software  Project Manager,  Programmer | Review current  state of in-progress implementation  products (i.e.  source code),  document issues  that need resolving,  assign resolution,  and set schedule for  resolution. | 1.Resources booked by  Programmer  2. Products to be reviewed will  be distributed at least 48  hours prior to the meeting  by Programmer  3. Meeting held to review  implementation products  and create issue resolution  plan.  4. Programmer distributes  review summary |

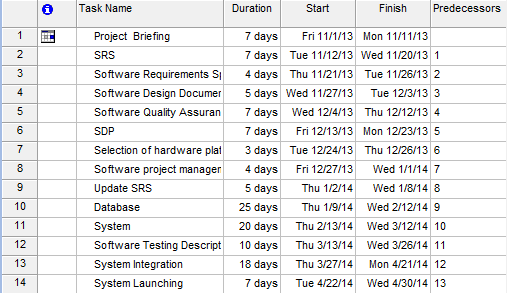
**5. NOTES**

**Table 5.1**: Definition of Term

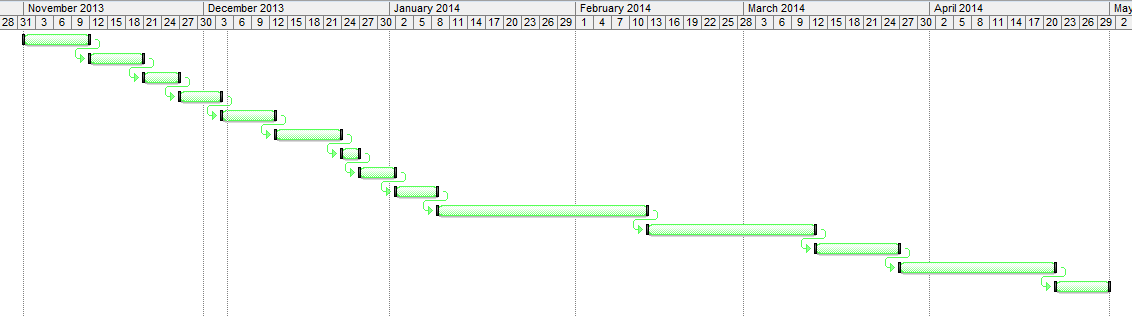
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| --- | --- |
| **Term** | **Definition** |
| RFP | Request for Proposal |
| SRS | Software Requirements Specification |
| SQAP | Software Quality Assurance Plan |
| STP | Software Testing Plan |
| SDS | Software Design Specification |
| SCMP | Software Configuration Management Plan |
| SVVP | Software Verification and Validation Plan |
| Project deliverable | A work product to be delivered to the acquirer |
| PHP | Hypertext Preprocessor |
| IT | Information Technology |
| COSYS | Compound System UMP |

APPENDICES

**APPENDIX A**



**Appendix A-1** Schedule

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**Appendix A-2** Gantt Chart

**APPENDIX B**



**Appendix B-1** Company Logo

PROJECT MANAGERNORUL HUSNA BINTI OTHMAN

**Appendix B-2** Company Organization Structure