

Chapter 2

Project Plan

Emergency Information on Mobile

Project Plan

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Document History

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PJ – Putchakarn Jaikon, SK – Sawatdiporn Kitirot, CD – Chartchai Doungsa-ard

Table of Contents

<i>Chapter One / Introduction.....</i>	<i>5</i>
1.1 Identification	5
1.2 Project Overview	5
1.3 Document Overview	5
1.4 Work Products to be Develop	7
1.5 Acronyms and Definitions	8
<i>Chapter Two / Infrastructure.....</i>	<i>10</i>
2.1 Software Development Life Cycle	10
2.2 Software Acquisition Plans	10
2.3 Hardware and Material Resources	11
<i>Chapter Three / Management Procedures</i>	<i>12</i>
3.1 Project Team Structure	12
3.2 Monitoring and Controlling Mechanism.....	12
<i>Chapter Four / Quality Plan.....</i>	<i>13</i>
4.1 Quality Factors	13
4.2 Reviews/Responsibility	14
4.3 Testing.....	14
4.4 Software Development Standard.....	14
<i>Chapter Five / Estimated Duration of Tasks.....</i>	<i>17</i>
5.1 Schedule Estimate Time.....	17
<i>Chapter Six / Estimated Effort and Cost.....</i>	<i>22</i>
<i>Chapter Seven / Identification of Project Risks</i>	<i>23</i>
7.1 Risk Identification and Solutions.....	23
<i>Chapter Eight / Version Control Strategy</i>	<i>24</i>
8.1 Naming Conversion.....	24
8.2 Project Repository	25
8.3 Configuration Item Table	26

Chapter One | Introduction

1.1 Identification

The Project Management Plan is a document for planning, scheduling activities and evaluating overall of the project so that the project will complete as successfully as possible in spite of all the risks. The Project Management will lead us to see specific project reach fruition and allow us to work with it and see a project through from start to finish.

1.2 Project Overview

Emergency Information on Mobile provides user's application and administrator's webpage. The application will show online map and offline map. User can views the information of each help place on the map and call directly from the application. The administrator webpage uses to manage the information such as add, edit information and delete help place out of the database.

1.2.1 Purpose & Scope

Emergency Information on Mobile will support online map and offline map to help people about the information of the help pace. The application will provide the offline map with information around the user ten kilometers when they lost Internet connection.

1.3 Document Overview

The purpose of the Emergency Information on Mobile project plan guide project team members during the development of Emergency Information on Mobile project.

Progress Report I consist of

- **Feature 5: Manage Information System**

[URS-01]: The administrator can add help place's information, which includes name, address, district, province, zip code, phone number, category, latitude and longitude.

[URS-02]: The administrator can edit help place's information, which includes name, address, district, province, zip code, phone number, category, latitude and longitude.

[URS-03]: The administrator can remove help place.

[URS-04]: The administrator can view help information of each help place.

[URS-05]: The administrator can browse the help place by category.

[URS-06]: The administrator can browse the help place by province of Thailand.

[URS-07]: The administrator can browse the help place by category and province of Thailand.

• **Feature 1: Map and Help Information System**

[URS-08]: The user can view the online map with their current location.

[URS-09]: The user can view the offline map with their current location.

[URS-10]: The user can view help places in online map.

[URS-11]: The user can view help places in offline map.

[URS-12]: The user can view help information of each help place in online map.

[URS-13]: The user can view help information of each help place in offline map.

[URS-14]: The user can make emergency call to each help place in online map.

[URS-15]: The user can make emergency call to each help place in offline map.

1.4 Work Products to be Develop

1.3.1 Deliverable

No.	Deliverables/Release	Media	No. of Copies	Date
1	Project Proposal • Emergency Information On Mobile Version 1.0	Document	3	6 th March 2014
2	Progress Report I • Project Management Plan Version 1.0 • Software Requirement Specification Version 1.0 • Software Design Document Version 1.0 • Test Plan Version 1.0 • Traceability Record Version 1.0 • Software Version 1.0	Document Document Document Document Document Source Code	3 3 3 3 3 1	7 th July 2014
3	Progress Report II • Project Management Plan Version 2.0 • Software Requirement Specification Version 2.0 • Software Design Document Version 2.0 • Test Plan Version 2.0 • Traceability Record Version 2.0 • Software Version 2.0	Document Document Document Document Document Source Code	3 3 3 3 3 1	3 rd Sept 2014

4	Final Progress			26 th Nov 2014
	• Project Management Plan Version 3.0	Document	3	
	• Software Requirement Specification Version 3.0	Document	3	
	• Software Design Document Version 3.0	Document	3	
	• Test Plan Version 3.0	Document	3	
	• Traceability Record Version 3.0	Document	3	
	• Show Pro Event			5 th Nov 2014
	- 30 second Video	Files	1	
	- Poster size A1	Poster	1	
	- User manual	Files	1	
	• Software Version 3.0	Source Code	1	
	• Software Source Code	CD-ROM	1	26 th Dec 2014

1.5 Acronyms and Definitions

1.5.1 Acronyms

EIOM	Emergency Information on Mobile
SRSs	Software Requirement Specification Server
SRSm	Software Requirement Specification Mobile
URSs	User Requirement Specification Server
URSm	User Requirement Specification Mobile
UCs	Use Case Server
UCm	Use Case Mobile
UIs	User Interface Server
UIm	User Interface Mobile
UTCs	Unit Test Case Server
UTCm	Unit Test Case Mobile
STCs	System Test Case Server
STCm	System Test Case Mobile

1.5.2 Definition

Acceptance Test	Test activities for sample checks to verify that a system (or product, solution) has the right quality for development or usage. Often acceptance test is done by the customer. [IEEE90]
Feature	Transformation of input parameters to output parameters based on a specified algorithm. It describes the functionality of a product. Used for requirements analysis, design, coding, testing or maintenance. [IEEE90]
IEEE	Institute for Electrical and Electronics Engineers. Biggest global interest group for engineers of different branches and for computer scientists. [IEEE90]
Plan	A documented series of tasks requires meeting an objective, typically including the associated schedule, budget, resources, organizational description and work breakdown structure. [IEEE90]
Project Management	The application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project. [IEEE90]
Project plan	A formal, approved document used to guide both project execution and project control. The primary uses of project plan are to document planning assumptions and the decision, to facilitate communication among stakeholders, and to document approved scope, cost, and schedule baseline. [IEEE90]
Risk	An uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives. It is a function of a probability of occurrence of a given threat's occurrence. [IEEE90]
Risk Management	The systematic application of management policies, procedures and practices to the tasks of identifying, analyzing, evaluating, treating and monitoring risk. [IEEE90]
Traceability	The ability to trace the history, application or location of an item or activity, or work products or activities, by means of recorded identification. The establishment and maintenance of relationships between such items. Horizontal traceability describes the relationship between work products of same type (e.g., customer requirements). Vertical traceability describes the relationship between work products which build upon each other or are derived from each other (e.g., from customer requirements to qualification test cases). Bidirectional traceability allows to directly following relationships in both directions. [IEEE90]
Unit test	A test of individual programs or modules in order to remove a design or programming errors. [IEEE90]

Chapter Two | Infrastructure

2.1 Software Development Life Cycle

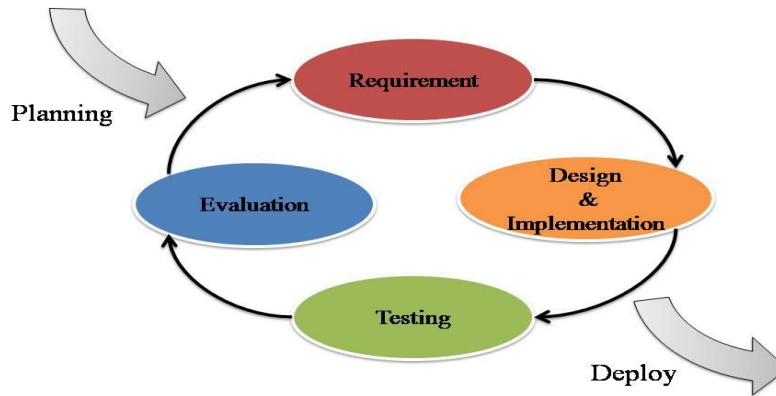


Figure 1 Iterative Development Model

Figure 1 presents a method of software development. Iterative development model is a cyclic software development process developed in response to the weaknesses of the Waterfall model. The model starts with planning and continues through iterative development cycles.

Emergency Information on Mobile uses Iterative Development Model. Developer can use model to develop the iterative way to fulfill, change software and document for each development process.

2.2 Software Acquisition Plans

2.2.1 Design Tools

- Photoshop CS6
- Adobe Dreamweaver CS6

2.2.2 Development Tools

- Eclipse Kepler
- IntelliJ 12.1.6

2.2.3 Configuration Management Tools

- GitHub
-

2.2.4 Document Tools

- Microsoft Word 2013

2.2.5 Testing Tools

- Smart Phone Samsung (Android Device)
- Notebook with Google chrome or Firefox browser
- Host Server

2.3 Hardware and Material Resources

- **Internet**
- **Computers**
 - Apple Macbook Pro mid 2013
 - Processor: Intel® Core™ i7-3520M CPU @ 2.90GHz
 - RAM: 8.00 GB
 - Operating System: Windows 7 Ultimate
 - Dell Inspiron n5110
 - Processor: Intel® Core™ i5-2410M CPU @ 2.30GHz
 - RAM: 4.00 GB
 - Operating System: Windows 7 Ultimate
- **Mobile phones:** Android Operating System
 - Samsung Galaxy Grand 2 SM-G7102
 - CPU: Quad-core 1.2 GHz Cortex-A7
 - RAM: 1.5 GB
 - Operating System: Android OS, v4.3 (Jelly Bean)
 - Samsung Galaxy S DUOS
 - CPU: 1GHz Cortex-A5
 - RAM: 768 MB
 - Operating System: Android OS, v4.04 (Ice Cream Sandwich)

Chapter Three | Management Procedures

3.1 Project Team Structure

Roles	Responsibility
Developer	<ul style="list-style-type: none"> Create document <ul style="list-style-type: none"> - Proposal - Project Plan - SRS - Software Design Document Develop software
Tester	<ul style="list-style-type: none"> Create document <ul style="list-style-type: none"> - Test Plan - Test Record - Traceability Record Test software
Reviewer	<ul style="list-style-type: none"> Review document and software Manage change

Participants	Roles
Sawatdiporn Kitirot	Server Part: Developer, Tester and Reviewer
Putchakarn Jaikon	Mobile Part: Developer, Tester and Reviewer

3.2 Monitoring and Controlling Mechanism

3.2.1 Project Meeting

Participants	Roles
Aj.Chartchai Doungsa-ard	Project Advisor
Putchakarn Jaikon	Development team member
Sawatdiporn Kitirot	Development team member

Chapter Four | Quality Plan

4.1 Quality Factors

Product operation factors

- **Correctness**
 - A software product should be able to provide correctness information of help places more than 80% of data.
- **Reliability**
 - The software should be able to handle more than 80% of traditional activity with less than 10% of software's failure.
- **Usability**
 - The person who uses software product, as his first time should be able to estimate complacency of the product. The estimate complacency of the user to the product should more than 70 %.

Product revision factors

- **Testability**
 - The software should be able to be tested 100% of it defined routine and functionality.

Product transition factors

- **Reusability**
 - More than 20% part of finished software product should be able to be reused in future development.

4.2 Reviews/Responsibility

Stage Exit Review			
No.	Stage	Review Item	Responsibility
1	The progress report I - III	Project Plan	Putchakarn, Sawatdiporn
2	The progress report I - III	Requirement Specification - Feature 5-6 (Server Part) - Feature 1-4(Mobile Part)	Sawatdiporn Putchakarn
3	The progress report I - III	Architecture and Software Design Document - Feature 5-6 (Server Part) - Feature 1-4 (Mobile Part)	Sawatdiporn Putchakarn
4	The progress report I - III	Software Testing - Feature 5-6 (Server Part) - Feature 1-4 (Mobile Part)	Sawatdiporn Putchakarn
5	The progress report I - III	Traceability Record	Putchakarn, Sawatdiporn

4.3 Testing

Test Process		
No.	Test	Responsibility
1	Unit Testing - Feature 5-6 (Server Part) - Feature 1-4(Mobile Part)	Sawatdiporn Putchakarn
2	System Testing	Putchakarn, Sawatdiporn
3	Acceptance Testing	Putchakarn, Sawatdiporn

4.4 Software Development Standard

4.4.1 ISO29110 for Very Small Entity (VSE)

ISO 29110 is a guide applies to Very Small Entities (VSEs), enterprise, organization, department or project up to 25 people, dedicated to software development. The Guide provides Project Management and Software Implementation process which integrate practices based on the selection of ISO/IEC12207- Systems and Software Engineering –Software Life Cycle process – guidelines for the content of software life cycle process information products (documentation) standards elements.

1. Project Management (PM) process

- PM purpose

The purpose of the Project Management process is to establish and carry out in a systematic way the tasks of the software implementation project, which allows complying with the project's objectives in the expected quality, time and costs.

- PM objectives

PM.O1: The *Project Plan* for the execution of the project is developed according to the *Statement of Work* and validated with the Customer. The tasks and resources necessary to complete the work are sized and estimated

PM.O2: Progress of the project is monitored against the *Project Plan* and recorded in the *Progress Status Record*. Corrections to remediate problems and deviations from the plan are taken when project targets are not achieved. Appropriate treatment is taken to correct or avoid the impact of risk. Closure of the project is performed to get the Customer acceptance documented in the *Acceptance Record*.

PM.O3: The *Change Requests* are addressed through their reception and analysis. Changes to software requirements are evaluated for cost, schedule and technical impact.

PM.O4: Review meetings with the Work Team and the Customer are held. Agreements are registered and tracked.

PM.O5: *Risks* are identified as they develop and during the conduct of the project.

PM.O6: A software *Version Control Strategy* is developed. Items of *Software Configuration* are identified, defined and base lined. Modifications and releases of the items are controlled and made available to the Customer and Work Team including the storage, handling and delivery of the items.

1. Set rule for managing the version control.
2. Identify time for update version control.
3. Record change of each version in version control table.

PM.O7: Software Quality Assurance is performed to provide assurance that work products and processes comply with the *Project Plan* and *Requirements Specification*

- **PM Activities**

The Project Management Process has the following activities:

- PM.1 Project Planning
- PM.2 Project Plan Execution
- PM.3 Project Assessment and Control
- PM.4 Project Closure

2. Software Implementation (SI) process

- **SI purpose**

The purpose of the Software Implementation process is the systematic performance of the analysis, design, construction, integration and tests activities for new or modified software products according to the specified requirements.

- **SI objectives**

SI.O1: Tasks of the activities are performed through the accomplishment of the current *Project Plan*.

SI.O2: Software requirements are defined, analyzed for correctness and testability, approved by the Customer, base lined and communicated.

SI.O3: Software architectural and detailed design is developed and base lined. It describes the software items and internal and external interfaces of them. Consistency and traceability to software requirements are established.

SI.O4: Software components defined by the design are produced. Unit test are defined and performed to verify the consistency with requirements and the design. Traceability to the requirements and design are established.

SI.O5: *Software* is produced performing integration of software components and verified using *Test Cases and Test Procedures*. Results are recorded at the *Test Report*. Defects are corrected and consistency and traceability to *Software Design* are established.

SI.O6: A *Software Configuration* that meets the Requirements Specification as agreed to with the Customer, which includes user, operation and maintenance documentations, is integrated, base lined and stored at the *Project Repository*. Needs for changes to the *Software Configuration* are detected and related *Change Requests* are initiated.

SI.O7: Verification and Validation tasks of all required work products are performed using the defined criteria to achieve consistency among output

and input products in each activity. Defects are identified, and corrected; records are stored in the *Verification/Validation Results*.

- **SI activities**

The Software Implementation Process has the following activities:

- SI.1 Software Implementation Initiation
- SI.2 Software Requirements Analysis
- SI.3 Software Architectural and Detailed Design
- SI.4 Software Construction
- SI.5 Software Integration and Tests
- SI.6 Product Delivery

Chapter Five | Estimated Duration of Tasks

5.1 Schedule Estimate Time

Feature	Name	User Requirement Specification	Plan Date
		Name	
#1.	Map and help information system	The user can view the online map with their current location.	07/04/14 - 12/04/14
		The user can view the offline map with their current location.	18/04/14 - 23/04/14
		The user can view help places in online map.	24/04/14 - 30/04/14
		The user can view help places in offline map.	24/04/14 - 30/04/14
		The user can view help information of each help place in online map	01/05/14 - 14/05/14
		The user can view help information of each help place in offline map	15/05/14 - 30/05/14
		The user can make emergency call to each help place in online map	31/05/14 - 15/06/14
		The user can make emergency call to each help place in offline map	31/05/14 - 15/06/14
#2.	Search information system	The user can search help place's name by keyword.	22/07/14 - 30/07/14
		The user can find the nearest help place by selecting category in online map.	01/08/14 - 10/08/14

		The user can find the nearest help place by selecting category in offline map.	11/08/14 - 20/08/14
#3.	Rating location	The user can rate the help place.	24/09/14 - 30/09/14
		The user can view average rating score of each help place in online map.	01/10/14 – 05/10/14
		The user can view average rating score of each help place in offline map.	05/10/14 – 09/10/14
		The user can update rating score.	10/10/14 - 19/10/14
#4.	Automatic collecting data system	The user can set the scope for downloading data.	01/08/14 - 20/08/14
#5.	Manage information system	The administrator can add help place's information, which includes name, address, district, province, zip code, phone number, category, latitude and longitude.	07/04/14 - 20/04/14
		The administrator can edit help place's information, which includes name, address, district, province, zip code, phone number, category, latitude and longitude.	20/04/14 - 01/05/14
		The administrator can remove help place.	02/05/14 - 09/05/14
		The administrator can view help information of each help place.	10/05/14 - 20/05/14
		The administrator can browse the help place by category.	20/05/14 - 02/06/14
		The administrator can browse the help place by province of Thailand.	20/05/14 - 02/06/14
		The administrator can browse the help place by category and province of Thailand.	03/06/14 - 15/06/14
#6.	Support information for mobile	Sent nearest help place in JSON form	01/12/14 – 05/12/14
		Sent list of all help places in JSON form	06/12/14 – 09/12/14
		Sent list of all help places in setting scope in JSON form	10/12/14 – 14/12/14
		Retrieve new average rating score	14/12/14 – 18/12/14

Feature: #1- #4 (Mobile Part)

Feature: #5 - #6 (Server Part)

Progress Report I

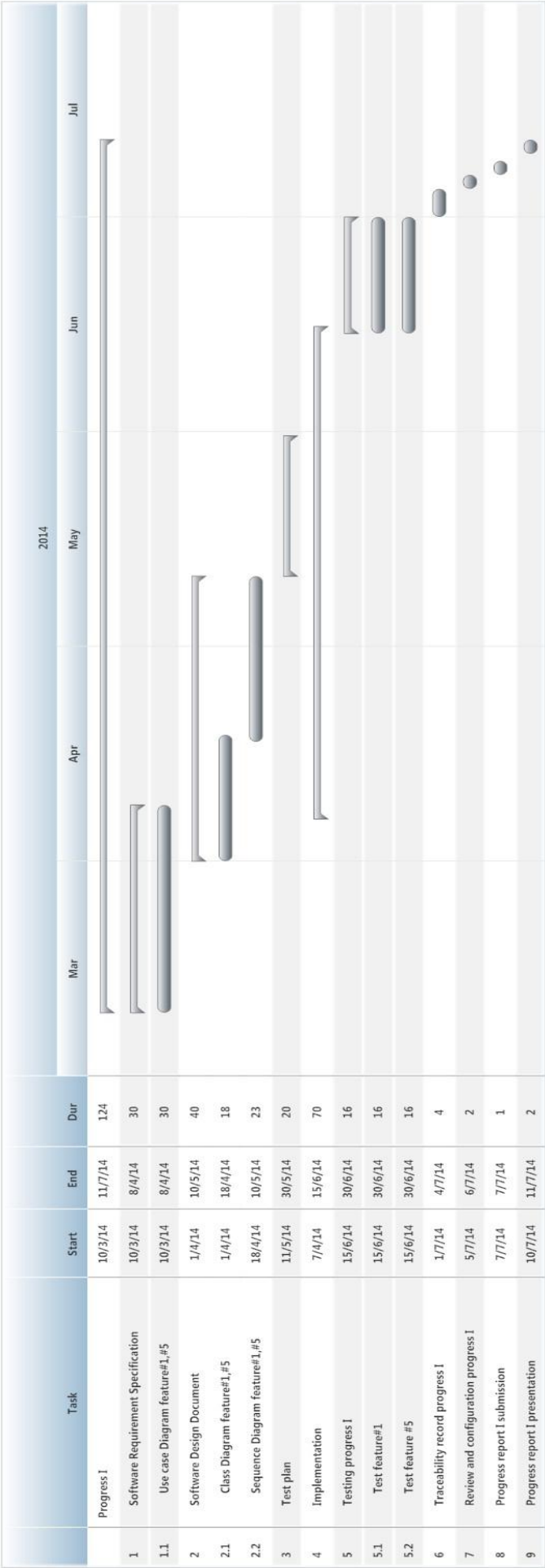


Figure 2 Milestone of Progress Report I

Figure 2 shows estimated duration of tasks in the progress report I

Progress Report II

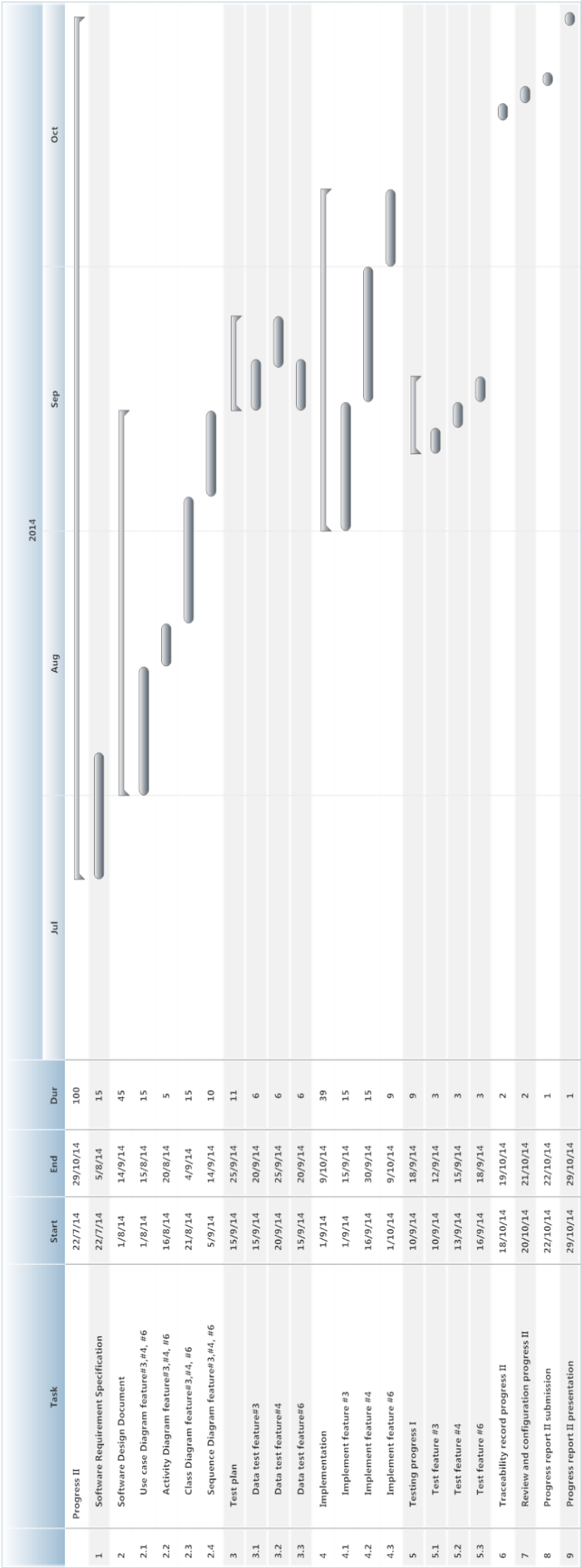


Figure 3 Milestone of Progress Report II

Figure 3 shows estimated duration of tasks in the progress report II

Progress Report III

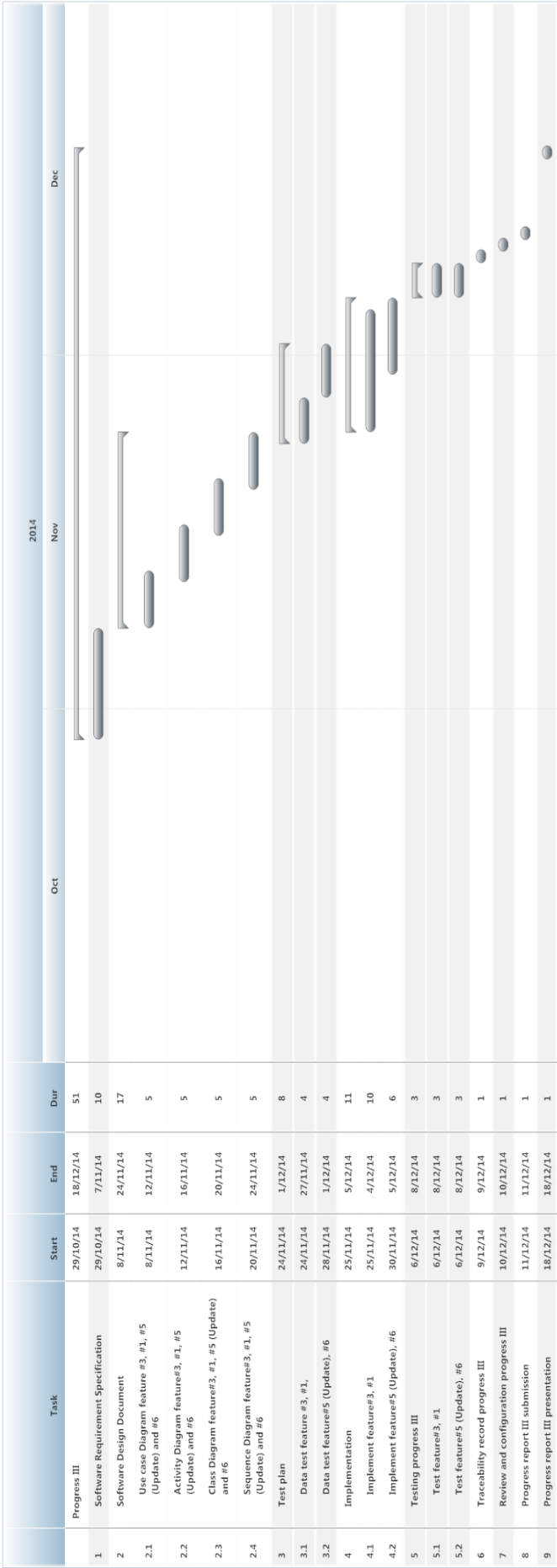


Figure 4 Milestone of Progress Report III

Figure 4 shows estimated duration of tasks in the progress report III

Chapter Six | Estimated Effort and Cost

Item	Approximately Cost (THB)
Android Programming Textbook	1,000
Print cost of software document (ink and paper)	2,000
Printer	1,500

Emergency Information on Mobile application is supported by College of Arts, Media and Technology, Chiang Mai University as a senior project. The faculty will provide 500 THB for poster presentation, and will provide hardware for development.

Chapter Seven | Identification of Project Risks

7.1 Risk Identification and Solutions

Risk	Solution
Group members lack skill and knowledge	<ul style="list-style-type: none"> - Need to study and training time for group members.
The deliverables may be delay	<ul style="list-style-type: none"> - Discuss with people who have knowledge about topic which is required for development.
Computer crash and document has been lost from developer's computer	<ul style="list-style-type: none"> - Working base on schedule.
	<ul style="list-style-type: none"> - Study hard with our project to decrease the risk about time for developing program.
	<ul style="list-style-type: none"> - Need to use version control version software like, GitHub to store the document.
	<ul style="list-style-type: none"> - Team member always updates file into GitHub.

Chapter Eight | Version Control Strategy

8.1 Naming Conversion

For naming conversion of Emergency Information on Mobile project, the name of document and software will be named as following format:

“[Project Name]-[Document Name]-[Version].[File Type]”

- **Project Name**

This part will be the name of this project that is “EIOM”

- **Document Name**

This part will depend on substance of that file. In each file will has its certain name as following:

- Proposal
- Project Plan & Quality Plan
- Software Requirement Specification (SRS)
- Software Design Document (SDD)
- Coding
- Test Plan
- Test Record
- Traceability Record (TR)

- **Version**

This part is the version of document. Version number will be in the following format:

“V.[Main version].[Sub version]”

- Main version is the main of version software and document. For example V.1.0, the number 1 is the main version. It might refer to feature of software.
- Subversion is a part of main for developing. Subversion will has to update more than the main version.

- **File Type**

This part is the type of file or the file extension. For example, .docx, .pdf.

8.2 Project Repository

• GitHub

GitHub is a tool that can help to manage the version of document and software. Developers can share file or update version of the file anytime that they want. Developers have to have their own account of GitHub. Then the developers can create a project file and can share it with anyone they want.

For Emergency Information on Mobile project, we will create folders to be the project repository as following:

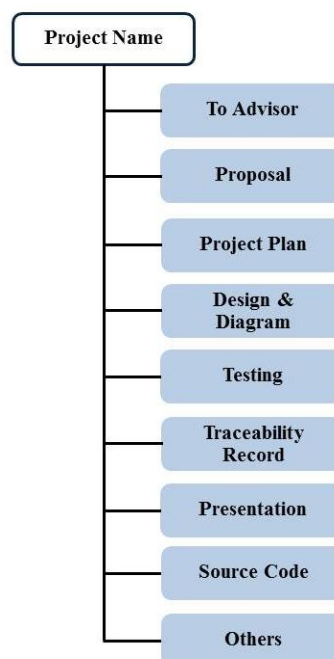


Figure 5 Repository of Emergency Information on Mobile project

List of related document and description

- To Advisor: contain document files that will be waiting to be reviewed by advisor.
- Proposal: contain involving proposal files.
- Project plan: contain project plan document files.
- Design & Diagram: contain design and diagram document files.
- Testing: contain testing document files.
- Traceability record: contain traceability record document
- Presentation: contain presentation files.
- Source code: contain source code of project.
- Others: contain kind of picture, server information, interesting web site and etc.

8.3 Configuration Item Table

No.	Item	File name	File Type	Owner	Path	Baseline version
1.	Project Proposal	EIOM-ProjectProposal-V.1.2	.docx	Putchakarn, Sawatdiporn	/EIOM /Proposal	1.2
2.	Project Plan	EIOM-ProjectPlan -V.3.0	.docx	Putchakarn, Sawatdiporn	/EIOM /Project Plan	3.0
3.	Software Requirement Specification	EIOM-SRS-V.3.0	.docx	Putchakarn, Sawatdiporn	/EIOM /Design&Diagram	3.0
4.	Software Design Document	EIOM-SDD-V.3.0	.docx	Putchakarn, Sawatdiporn	/EIOM /Design&Diagram	3.0
5.	Test Plan	EIOM-TestPlan-V.3.0	.docx	Putchakarn, Sawatdiporn	/EIOM /Testing	3.0
6.	Test Record	EIOM-TestRecord-V.3.0	.docx	Putchakarn, Sawatdiporn	/EIOM /Testing	3.0
7.	Traceability Record	EIOM-TraceabilityRecord-V.3.0	.docx	Putchakarn, Sawatdiporn	/EIOM / Traceability Record	3.0
8.	Source Code	EIOM-SourceCode-V.3.0	.rar	Putchakarn, Sawatdiporn	/EIOM / Source Code	3.0