**Emergency Information on Mobile**

Traceability Record

By

Putchakarn Jaikon 542115031

Sawatdiporn Kitirot 542115065

Department of Software Engineering

College of Arts, Media and Technology

Chiang Mai University

Project Advisor

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Aj.Chartchai Doungsa-ard**

**Document History**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Document Name** | **Version** | **Status** | **Date** | **Viewable** | **Editable** | **Responsible** |
| **Documents** | | | | | | |
| **EIOM-TraceabilityRecord-V.0.1.docx** | **Chapter 1**      Introduction | Draft | 1/7/2014 | Putchakarn  Sawatdiporn  Aj.Chartchai | Putchakarn  Sawatdiporn | Putchakarn  Sawatdiporn |
| **EIOM- TraceabilityRecord -V.0.2.docx** | **Chapter 2**      Traceability Record Table | Draft | 2/7/2014 | Putchakarn  Sawatdiporn  Aj.Chartchai | Putchakarn  Sawatdiporn | Putchakarn  Sawatdiporn |
| **EIOM- TraceabilityRecord -V.0.3.docx** | **Modify Chapter 2**      Traceability Record Table | Draft | 3/7/2014 | Putchakarn  Sawatdiporn  Aj.Chartchai | Putchakarn  Sawatdiporn | Putchakarn  Sawatdiporn |
| **EIOM- TraceabilityRecord -V.1.0.docx** |     Add Table of content and cover page | Draft | 4/7/2014 | Putchakarn  Sawatdiporn  Aj.Chartchai | Putchakarn  Sawatdiporn | Putchakarn  Sawatdiporn |

Table of Content

Chapter One | Introduction 4

1.1 Purpose 4

1.2 Project Scope 4

Chapter Two | Traceability Matrix Table 6

2.1 User Requirement Specification and System Requirement Specification 6

2.2 User Requirement Specification and Use Case 7

2.3 User Requirement Specification and Sequence Diagram 8

2.4 User Requirement Specification and User Interface Design 9

2.5 User Requirement Specification and Method Description Server 10

2.6 User Requirement Specification and Method Description Mobile 10

2.7 Class Diagram Server and Method Description Server 11

2.8 Class Diagram Mobile and Method Description Mobile 12

2.9 Unit Test Case and Method Description Server 13

2.9 Unit Test Case and Method Description Mobile 13

Chapter Three| Traceability Record Table 14

Chapter Four | Appendix 15

4.1 User Requirement Specification 15

4.2 System Requirement Specification 15

4.3 Use Case 17

4.4 Sequence Diagram 18

4.5 User Interface Design 18

4.6 Method Description 19

4.7 Class Diagram 21

4.8 Unit Test Case 22

# Chapter One | Introduction

## Purpose

The purpose of traceability record for Emergency Information on Mobile project is to show the relation of the project. The traceability is linked between user requirements to system requirement specification, use case, sequence diagram and user interface design.

## Project Scope

Emergency Information on Mobile is an application that runs on android operating system. The application provides online map and offline map to help people about the information of the help pace. Emergency Information on Mobile will provide the offline map with information around the user when they lost Internet connection.

The main features of EIOM will be following:

**Mobile Part**

|  |  |  |
| --- | --- | --- |
| **Feature** | **Name** | **User Requirement Specification** |
| **Name** |
| #1. | Map and help information system | The user can view the online map with their current location. |
| The user can view the offline map with their current location. |
| The user can view the help places in online map. |
| The user can view the help places in offline map. |
| The user can view help information of each help place in online map |
| The user can view help information of each help place in offline map |
| The user can make emergency call to each help place in online map |
| The user can make emergency call to each help place in online map |
| #2. | Search information system | The user can search help place’s name by keyword. |
| The user can find the nearest help place by selecting category in online map. |
| The user can find the nearest help place by selecting category in offline map. |

|  |  |  |
| --- | --- | --- |
| #3. | Rating location | The user can rate the help place. |
| The user can view average rating score of each help place in online map. |
| The user can view average rating score of each help place in offline map. |
| The user can update rating score. |
| #4. | Automatic collecting data system | The user can set the scope for downloading data. |

**Server Part**

|  |  |  |
| --- | --- | --- |
| **Feature** | **Name** | **User Requirement Specification** |
| **Name** |
| #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. |
| The administrator can edit help place’s information, which includes name, address, district, province, zip code, phone number, category, latitude and longitude. |
| The administrator can remove help place. |
| The administrator can view help information of each help place. |
| The administrator can browse the help place by category. |
| The administrator can browse the help place by province of Thailand. |
| The administrator can browse the help place by category and province of Thailand. |

The document will include Traceability Record, Requirement Specification, User Requirement Specification, Class Diagram, Sequence Diagram and User Interface Design.

**Traceability Record** is a document which shows relation of the entire project.

# Chapter Two | Traceability Matrix Table

## 2.1 User Requirement Specification and System Requirement Specification

## 

## 2.2 User Requirement Specification and Use Case



## 2.3 User Requirement Specification and Sequence Diagram

## 

## 2.4 User Requirement Specification and User Interface Design



## 2.5 User Requirement Specification and Method Description Server



## 2.6 User Requirement Specification and Method Description Mobile



## 2.7 Class Diagram Server and Method Description Server



## 2.8 Class Diagram Mobile and Method Description Mobile



## 2.9 Unit Test Case and Method Description Server

## 

## 2.10 Unit Test Case and Method Description Mobile



# Chapter Three| Traceability Record Table



# Chapter Four | Appendix

## 4.1 User Requirement Specification

**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.

**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 the help places in online map.

**URS-11:** The user can view the 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.

## 4.2 System Requirement Specification

1. The system provides the UI, which receive name, address, district, province, zip code, phone number, category, latitude and longitude.
2. The system provides map UI.
3. The system provides searched province UI.
4. The system shall receive latitude and longitude from map.
5. The system shall check the name length. The name must be 1- 50 characters.
6. The system shall check the address length. The address must be 0- 50 characters.
7. The system shall check the district length. The district must be 0- 50 characters.
8. The system shall check the zip code length. The zip code must be 0-5 characters.
9. The system shall check the phone number format. The phone number should be 9-10 digits.
10. The system shall check the latitude format. The latitude should not be null.
11. The system shall check the longitude format. The longitude should not be null.
12. The system shall check the province format. The province should not be null.
13. The system shall check the category format. The category should not be null.
14. The system shall display the error message “Name must between 1 to 50 characters”
15. The system shall display the error message “The address length should be 0-50 characters”
16. The system shall display the error message “The district length should be 0-50 characters”
17. The system shall display the error message “The zip code length should be 0-5 characters”
18. The system shall display the error message “Please choose province”
19. The system shall display the error message “The phone number length should be 9-10 characters”
20. The system shall display the error message “Please put latitude”
21. The system shall display the error message “Please put longitude”
22. The system shall display the error message “Please choose province”
23. The system shall add a new help place into the database.
24. The system shall provide the successful adding help information UI with message “The help place has been added to database.”
25. The system shall retrieve all help places from system database.
26. The system shall provide UI to show all lists of help places.
27. The system shall provide edit UI for all lists of help places.
28. The system retrieves information of the selected help place from database.
29. The system shall show information of the selected help place which includes name, address, district, province, zip code, phone number, category, latitude and longitude.
30. The system shall update the help information into the database.
31. The system shall provide the successful editing help information UI with message “The help place has been added to database.”
32. The system shall provide remove UI for all lists of help places.
33. The system shall provide UI with message “Are you sure to delete?” to ask permission before remove help place.
34. The system shall delete the help place out of the database.
35. The system shall provide the successful removing help place UI with message “The help place has been removed!”
36. The system provides categories UI, which are police station, highway police station, hospital, and garage.
37. The system shall retrieve help places from database by the selected category.
38. The system shall show lists of help places by selected category.
39. The system provides UI to show lists of Thailand’s provinces.
40. The system shall retrieve the help place from database by the selected province.
41. The system shall show lists of help places by the selected province.
42. The system provides UI to show lists of categories and Thailand’s provinces.
43. The system shall retrieve help places from database by the selected category and province.
44. The system shall show lists of help places by the selected category and selected province
45. The system shall obtain the latitude and longitude of the user’s current location.
46. The system shall show the online map UI.
47. SRS-: The system shall show the user’s current location on the online map.
48. The system shall check MapsWithMe application is installed in the device.
49. The system shall show dialog to offer user download MapsWithMe application.
50. The system shall connect MapsWithMe application.
51. SRS-: The system shall show the offline map UI.
52. SRS-: The system shall show the user’s current location on the offline map.
53. The system will retrieve all help places from server.
54. The system shall input marker of help places into online map UI.
55. The system shall show all markers of help places on an online map UI.
56. The system shall retrieve the loaded help places from the user’s device**.**
57. The system shall input marker of help places into offline map UI.
58. The system shall show all markers of help places on an offline map UI.
59. The system shall receive the help place object that user selected from online map.
60. The system shall retrieve information of help place object.
61. The system provides information UI to show the help information, which are name, address, district, province, zip code, and phone number.
62. The system shall provide the call UI.
63. The system shall call to the selected help place.

## 4.3 Use Case

**UC-01:** Add help place

**UC-02:** Edit help place

**UC-03:** Remove help place

**UC-04:** View help place’s information

**UC-05:** Browse the help place by category

**UC-06:** Browse the help place by province

**UC-07:** Browse the help place by province and category

**UC-08:** View the online map

**UC-09:** View the offline map

**UC-10:** View the help places in online map

**UC-11:** View the help places in offline map

**UC-12:** View information of each help place in online map

**UC-13:** View information of each help place in offline map

**UC-14:** Make emergency call to each help place in online map

**UC-15:** Make emergency call to each help place in offline map

## 4.4 Sequence Diagram

**SD-01:** Add help place sequence diagram

**SD -02:** Edit help place sequence diagram

**SD -03:** Remove help place sequence diagram

**SD -04:** View help place’s information sequence diagram

**SD -05:** Browse the help place by category sequence diagram

**SD -06:** Browse the help place by province sequence diagram

**SD -07:** Browse the help place by province and category sequence diagram

**SD -08:** View the online mapsequence diagram

**SD -09:** View the offline mapsequence diagram

**SD -10:** View the help places in online mapsequence diagram

**SD -11:** View the help places in offline mapsequence diagram

**SD -12:** View information of each help place in online mapsequence diagram

**SD -13:** View information of each help place in offline mapsequence diagram

**SD -14:** Make emergency call to each help place in online mapsequence diagram

**SD -15:** Make emergency call to each help place in offline map sequence diagram

## 4.5 User Interface Design

**UI-01:** Home page

**UI-02:** Remove confirm dialog

**UI-03:** Successfully remove dialog

**UI-04:** Update information page

**UI-05:** Successfully add dialog

**UI-06:** View information page

**UI-07:** Start page  
**UI-08:** Show online map

**UI-09:** Connect offline map

**UI-10:** Show offline map

**UI-11:** MapsWithMe Application installed

**UI-12:** MapsWithMe Application

**UI-13:** Show information page

## 4.6 Method Description

**4.6.1 Method Description Server**

1. HelpPlaces
2. getHelpPlaces
3. updateHelpPlace
4. deleteHelpPlace
5. findById
6. getHelpPlacesByCategory
7. getHelpPlacesByProvince
8. getHelpPlacesByCategoryAndProvince
9. getHelpPlaces
10. updateHelpPlace
11. deleteHelpPlace
12. findById
13. getHelpPlacesByCategory
14. getHelpPlacesByProvince
15. getHelpPlacesByCategoryAndProvince
16. getHelpPlaces
17. findById
18. updateHelpPlace
19. deleteHelpPlace
20. getHelpPlacesByCategory
21. getHelpPlacesByProvince
22. getHelpPlacesByCategoryAndProvince
23. setHelpPlaceDAO
24. getHelpPlaces
25. updateHelpPlace
26. deleteHelpPlace
27. findById
28. getHelpPlacesByCategory
29. getHelpPlacesByProvince
30. getHelpPlacesByCategoryAndProvince
31. setHelpPlaceDAO
32. Category
33. getCategories
34. getCategoryById
35. getCategories
36. getCategoryById
37. getCategories
38. getCategoryById
39. setCategoryDAO
40. getCategories
41. getCategoryById
42. setCategoryDAO
43. Province
44. getProvinces
45. getProvinceById
46. getProvinces
47. getProvinceById
48. getProvinces
49. getProvinceById
50. setProvinceDAO
51. getProvinces
52. getProvinceById
53. setProvinceDAO
54. listHelpPlaces
55. getHelpPlaceByCategoryAndProvince
56. getHelpPlaceById
57. addHelpPlace
58. updateHelpPlace
59. removeHelpPlace
60. addValidHelpPlace

**4.6.2 Method Description Mobile**

1. getHelpPlacesByJsonOBJ
2. getHelpPlacesOnDevice
3. setHelpPlacesOnDevice
4. getJsonObjByURL
5. getHelpPlacesByJsonOBJ
6. getHelpPlacesOnDevice
7. setHelpPlacesOnDevice
8. getHelpPlaceService
9. OnlineMapController
10. OfflineMapController
11. OfflineMapController
12. getAllHelpplaceSaved
13. createMWMMap
14. saveHelpPlacesToDevice
15. setDb
16. getPendingIntent
17. handleIntent
18. getJSONFromUrl
19. onCallStateChanged
20. selectDatabase
21. copyDatabase
22. getHelpPlaces

## 4.7 Class Diagram

**4.7.1 Class Diagram Server**

1. HelpPlace
2. HelpPlaceDAO
3. HelpPlaceDAOImpl
4. HelpPlaceService
5. HelpPlaceServiceImpl
6. Category
7. CategoryDAO
8. CategoryDAOImpl
9. CategoryService
10. CategoryServiceImpl
11. Province
12. ProvinceDAO
13. ProvinceDAOImpl
14. ProvinceService
15. ProvinceServiceImpl
16. HelpPlaceController

**4.7.2 Class Diagram Mobile**

1. HelpPlace
2. HelpPlaceService
3. HelpPlaceServiceImpl
4. HelpPlaceSingleton
5. OnlineMapController
6. OffllineMapController
7. InformationView
8. JSONParser
9. PhoneCallListener
10. DatabaseConnection

## 4.8 Unit Test Case

**UTC-01:** getHelpPlaces():List<HelpPlace>

**UTC-02:** findById(Integer id):HelpPlace

**UTC-03:** updateHelpPlace(HelpPlace helpPlace):HelpPlace

**UTC-04:** deleteHelpPlace(HelpPlace helpPlace):boolean

**UTC-05:** getHelpPlacesByCategory(Integer categoryId)**:**List<HelpPlace>

**UTC-06:** getHelpPlacesByProvince(Integer provinceId)**:**List<HelpPlace>

**UTC-07:** getHelpPlacesByCategoryAndProvince(Integer categoryId,Integer

provinceId)**:**List<HelpPlace>

**UTC-08:** getCategories():List<Category>

**UTC-09:** getCategoryById (Integer id):Category

**UTC-10:** getProvinces():List<Province>

**UTC-11:** getProvinceById (Integer id):Province

**UTC-12:** testGetHelpPlaceByJsonOBJ (JSONObject jsonOBJ):JSONArray

**UTC-13:** testGetHelpPlacesOnDevice():HelpPlace [ ]