SOFTWARE DESIGN DOCUMENT

**(SDD)**

**For**

**[Online Car Rental Management System]**

of the

**ON-BOARD AUTOMOBILE**

**(OBA)**

CONTRACT NO:

**CASE (Man\_Doc\_006)**

CDRL SEQUENCE NO:

**CASE (Man\_Doc\_008)**

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**September 2010**

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# SCOPE

## Identification

System name: Online Car Rental Management System

Abbreviation: OCRMS

System ID No.: OCRMS-V.01-2016

## Overview of the System

The objective of this project is to develop a web based computer system to support existing manual car rental management process.OCRMS will convert manual car rental management into a computerized system which is integrated with a database system. By this integration,the system is capable to insert,save, update, delete, retrieve records and data. This system can keep huge data organized, secured and may reduce the uses of lots of paper. This system is a web-based application which means that Graphic User Interfaces (GUI) are implemented using any web browser. By default it is an internet-based application whereas user need an internet connection to access this system. The users of this system are customer,employee and manager who have different level of authority and function access to the system .Plus, the outsider is able to access OCRMS home page as it is public.

The major activities of the system are supporting the management information of the car rental process which include the manipulating the specific data, which are booking,customers and cars details. By using this system, the customer can book car for rental online.This include modifying the booking details which include update and cancelling the booking.The employee can update car availability and info,view customer info and generate bill using this system.While the manager can use this system to view monthly rental reports.These system features makes the car rentaling process more efficient and less complicated while contributing to better management process.

**Purpose of the System:**

The purpose of this system is to support existing manual car rental management process. OCRMS will convert manual car rental management into a computerized system which is integrated with a database system. These document explained the purpose and features of the system, the interfaces that being used, what the system can do, the constraint under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system.

## Overview of the Document

This Software Requirement Specification(SRS) document have seven different part which is Scope ,Referenced Documents, Preliminary Design, Detailed Design, CSCI Data and CSCI Data Files, Requirements Traceability, Notes.

The purpose of this document is to outline the entire requirement that has been gathered for the Online Car Rental Management System.

In general, this SDD is divided into 8 sections as the following:

|  |  |
| --- | --- |
| **Chapter 1** | Describes the scope identification, system overview and the document overview. |
| **Chapter 2** | Referenced documents, government documents and non-government documents. |
| **Chapter 3** | Describes the preliminary design for the CSCI. The preliminary design will identify CSC, the description of each CSC design, the characteristics of each CSC and the traceability of requirements set forth in SRS and IRS. |
| **Chapter 4** | Describes the detail design. |
| **Chapter 5 & 6** | Describes the global data elements within the CSCI & Describes each of the shared data files of the CSCI. (data dic) |
| **Chapter 7** | Requirements traceability to SRS and IRS documents. |
|  |  |
| **Chapter 8** | Notes and abbreviations. |

# 2. REFERENCED DOCUMENTS

This section lists the document number and document name referenced in this document. Any discrepancies of this document in describing the software development process should be covered by the documents listed in this chapter. The following documents were referred as the basis for this SDD preparation.

Copies of specification, standards, drawings and publication requested by suppliers in contact with the specified supplying functions may be obtained by contacting the agency or directly through the contracting office.

## 2.1. Reference Documents

This section consists of the contractual documents and non-contractual documents.

[You must list all related reference document in your design document, book,etc]

1. SDP (FT-10-037-) Software Development Plan
2. SRS (OCRMS-V.01-2016) Software Requirements Specification

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

# 3. PRELIMINARY DESIGN

## 3.1. System Overview

This paragraph identifies the OCRMS external interface components, which are describe in the following figure.



Figure 1: System Design Overview

## 3.1.1 System Architecture

This paragraph identifies the internal organizational structure of the system. The relationship among system subsystem will be described.

## 3.1.1.1 Static Organization

[You need to describe the static organization or your subsystem or package available in your system. Also include the external package or library/component that you use in your system.]

Figure 2: Static Organization of [your system name]

This section describes the detail for each subsystem/package .

* 1. **[Package Name]**

[This package responsible to control…… This package consists of the following classes or unit]

* + 1. Class A
  1. **[Package Name]**

[The role of this subsystem is to manage. This package consists of the following classes or unit]

* + 1. Class B

**3.1.1.2. Dynamic Organization**

Figure 3 diagram shows components and their relationships between each other in System

Figure 3: Component Diagram of [Your system]

**3.1.1.3. CSCs Interfaces**

[Figure 4 shows all the interaction between package / subsystem and non-development external subsystem/unit. Further description for external package describe in section 3.1.1.4.]

**[Overall system interfaces need to show in this section]**

Figure 4: Package/Subsystem Interfaces

#### 3.1.1.4. External Interfaces

**[Figure 5 show the package of external interfaces. ………..]**

Figure 5: [Your System] External Interface

### 3.1.2. System States and Modes

This section describes states diagrams for [your system].

Figure 6: State Diagram for your system

## 3.2. CSCI Design Description

[your system] Consists of …..

### 3.2.1 [Your first subsystem (sub01)]

Figure 8 shows ……….

**[this figure should show the internal part of your subsystem including package diagram of your subsystem with the classes diagram hide inside the package]**

Figure 8: Visibility of [Subsystem]

### 3.2.2 [Your second subsystem (sub02)]

Figure 9 shows …..

**[this figure should show the internal part of your subsystem including package diagram of your subsystem with the classes diagram hide inside the package]**

Figure 9: Visibility of [Subsystem]

# 4. DETAILED DESIGN

This section divided into the following paragraphs and subparagraphs to describe the detailed design.

## 4.1 [ You first subsystem (sub01)]

## Figure 15 shows [subsystem]. This subsystem need to describe the relationship among the other subsystem classes

**[You need to show how the class inside your subsystem interact with each other..show the relationship with the package and class diagram..**

**Note :Only the class diagram which have the relationship with other class diagram need to mention inside the package. If the subsystem do not have any relationship with other subsystem, just put the subsystem itself]**

Figure 15: [Subsystem] Detail Design

### 4.1.1 [Class inside the package]

The purpose of this class ….

#### 4.1.1.1 Class [Class Name] Design

This subparagraph specifies the design of [Class name]

1. **Input/Output data elements**

List of input and output data elements:

Input : [input for class]

Output : [output for class]

1. **Local data elements**

|  |  |
| --- | --- |
| Name | sumSalary |
| Description | Total salary |
| Data Type | float |
| Precision/resolution | - |

Table 2: Local Data Definition for data elements

|  |  |
| --- | --- |
| Name | tempPeriodTimesForMaintenance |
| Description | Time to do maintenance |
| Data Type | Integer |
| Precision/resolution | - |

Table 3: Local Data Definition fordata elements

1. **Algorithms**

This section states the purpose and describes in detail the algorithms of this Slass

Class Type : Controller class

Responsibility : Determine which methods …..

Attributes : [Class Attributes]

**Methods : [**Class method]

**1. *operation1()***

**Responsibility : [**identified interrupt and signals]

**Input Parameter :** [none]

**Output Parameter :** None

**Algorithm :**

BEGIN

[Put your algorithm here]

END

**2.*Operation2 (parameter)***

**Responsibility : [**process save data]

**Input Parameter :** input

**Output Parameter :** None

**Algorithm :**

BEGIN

[Put your algorithm here]

END

## 4.2[ Second subsystem]

[Figure 17 show [Subsystem name] This Subsystem contains class A. ]

**[You need to show how the class inside your subsystem interact with each other..show the relationship with the package and class diagram..**

**Note :Only the class diagram which have the relationship with other class diagram need to mention inside the package. If the subsystem do not have any relationship with other subsystem, just put the subsystem itself]**

Figure 17: CSC Calibration Management Detail Design

### 4.2.1 [Class inside the package]

The purpose of this class ….

#### 4.2.1.1 Class [Class Name] Design

This subparagraph specifies the design of [Class name]

1. **Input/Output data elements**

List of input and output data elements:

Input : [input for class]

Output : [output for class]

1. **Local data elements**

|  |  |
| --- | --- |
| Name | tempPeriodTimesForMaintenance |
| Description | Time to do maintenance |
| Data Type | Integer |
| Precision/resolution | - |

Table 2: Local Data Definition for data elements

|  |  |
| --- | --- |
| Name | tempPeriodTimesForMaintenance |
| Description | Time to do maintenance |
| Data Type | Integer |
| Precision/resolution | - |

Table 3: Local Data Definition fordata elements

1. **Algorithms**

This section states the purpose and describes in detail the algorithms of this Slass

Class Type : Controller class

Responsibility : Determine which methods …..

Attributes : [Class Attributes]

**Methods : [**Class method]

**1. *operation1()***

**Responsibility : [**identified interrupt and signals]

**Input Parameter :** [none]

**Output Parameter :** None

**Algorithm :**

BEGIN

[Put your algorithm here]

END

**2.*Operation2 (parameter)***

**Responsibility : [**process save data]

**Input Parameter :** input

# Output Parameter : None

# 

# 5. NOTES

Abbreviation used:

* UMP Universiti Malaysia Pahang
* CDRL Context Data Requirement List
* CSCI Computer Software Configuration Items
* DAS Driving Assistance System
* DOD Department of Defence
* IRS Interface Requirement Specification
* ISDS Intelligent Safe Driving System
* MIL Military
* OBA On Board Automobile
* OOAD Object Oriented Analysis Design
* SDD Software Development Document
* SDP Software Development Plan
* SRS Software Requirement Specification
* SPM Software Programmer Manual
* SUM Software User’s Manual
* SOW Statement of Work
* UML Unified Modelling Language