FACULTY OF COMPUTER SYSTEMS & SOFTWARE ENGINEERING

BCS3323 - SOFTWARE TESTING & MAINTENANCE

**Test Plan**

DOOR ACCESS SYSTEM VIA FINGERPRINT WITH GSM

(RESMART)

Independence Verification and Validation

Version : 1.0.0

Date : 04/12/2016

**Document Control**

|  |  |
| --- | --- |
| **Document Name** | ReSMART Test Plan |
| **Reference Number** | ReSMART\_TP\_1 |
| **Version** | 1.0.0 |
| **Project Code** | BETA\_RESMART |
| **Status** | In-use |
| **Date Released** | 4th of December,2016 |

|  |  |  |
| --- | --- | --- |
| Name | Roles | **Contact Number** |
| Prepared By:  Razanalia Erma Binti Razali  Nabila Binti Zainal | Test Analysis | 013-9609179  016-3648303 |
| Prepared By:  Tengku Nazihah Binti Ungku Setea  Afifah Zuhdi Binti Hashim | Tester | 013-5897094  014-5220337 |
| Reviewed By:  Normaliana Binti Che Zahari | Test Lead | 013-9137233 |
| Verified By:  Dr Abdul Rahman Ahmed Mohammed Al-Sewari | Test Manager | 019-6358976 |

**Version History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Release Date** | **Section** | **Amendments** |
| 1.0.0 | 04/12/2016 | All | Original document |

**Distribution List**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Version** | **Release Date** | **Controlled Copy No** | **Recipient Name** | **Department** | **Issue Date** | **Return Date** |
| 1.0.0 | 04/12/2016 | 01 |  | Alpha Test-Co QA Dept. | 04/12/2016 |  |
| 1.0.0 | 04/12/2016 | 02 |  | Alpha Test-Co Test Team | 04/12/2016 |  |

# Table of Content

[**Document Control** i](#_Toc469513106)

[Table of Content iii](#_Toc469513107)

[1.0 Introduction 1](#_Toc469513108)

[1.1 Purpose 1](#_Toc469513109)

[1.2 Scope 1](#_Toc469513110)

[1.3 References 1](#_Toc469513111)

[2.0 Details of Test Plan 2](#_Toc469513112)

[2.1 Test Items 2](#_Toc469513113)

[2.2 Test Traceability Matrix 2](#_Toc469513114)

[2.3 Features To Be Tested 3](#_Toc469513115)

[2.4 Features Not To Be Tested 3](#_Toc469513116)

[2.5 Approach 4](#_Toc469513117)

[2.6 Item Pass/ Fail Criteria 4](#_Toc469513118)

[2.7 Suspension Criteria and Resumption Requirements 4](#_Toc469513119)

[2.8 Test Deliverables 5](#_Toc469513120)

[2.9 Entry Criteria 5](#_Toc469513121)

[2.10 Exit Criteria 5](#_Toc469513122)

[3.0 Test Management 6](#_Toc469513123)

[3.1 Planned Tasked and Activities 6](#_Toc469513124)

[3.2 Environment & Infrastructure 6](#_Toc469513125)

[3.2.1 Hardware 6](#_Toc469513126)

[3.2.2 Software 7](#_Toc469513127)

[3.2.3 Publications 7](#_Toc469513128)

[3.3 Responsibility and Authority 7](#_Toc469513129)

[3.4 Schedules, Estimates and Costs 8](#_Toc469513130)

[4.0 General 9](#_Toc469513131)

[4.1 Metrics 9](#_Toc469513132)

[4.2 Glossary 9](#_Toc469513133)

[4.3 Incident Classification 10](#_Toc469513134)

# 1.0 Introduction

## 1.1 Purpose

This test plan support the following objectives:

1. To detail the activities required to prepare for and conduct the system test.
2. To communicate to all responsible parties the tasks that they are to perform and the schedule to be followed in performing the tasks.
3. To define the sources of the information used to prepare the plan.
4. To define the test tools and environment needed to conduct the system test.

## 1.2 Scope

The scope of testing only covers black box-functional testing for features developed in RESMART, from F001 to F008. This test plan only covers system level test, excluding unit test, static test, integration test, acceptance test, regression test, confirmation test and as well as other type of test not mentioned in this Test Plan. It would focus on meeting the requirement of the system and making sure that the system is fit for purpose.

## 1.3 References

The following IEEE standards have been referenced in preparation of this document:

1. IEEE 829-1998 Standard for Software and System Test Documentation
2. IEEE 829-2008 Standard for Software and System Test Documentation

The following documents provide the test basic for this test design:

1. ReSMART Software Requirements Specifications (ReSMART\_SRS\_1.0)
2. ReSMART System Design Specification (ReSMART\_SRS\_1.0)

# 2.0 Details of Test Plan

## 2.1 Test Items

The following documents will provide the basis for defining correct operation:

1. ReSMART System Requirement Specifications 1.0 (SRS)
2. ReSMART Software Design Specifications 1.0 (SDS)

The test items include all system features in RESMART, as described in Section 2.2 below.

## 2.2 Test Traceability Matrix

The following table contains the functions in RESMART and its traceability:

|  |  |  |  |
| --- | --- | --- | --- |
| **Function ID** | **Risk Level** | **Description** | **Source of Function** |
| F001 | High | To allow manager to login into RESMART. | SRS |
| F002 | High | To allow manager to add the staff to RESMART. | SRS |
| F003 | High | To allow manager to search name of staff in RESMART. | SRS |
| F004 | High | To allow manager to amend any data of the staff RESMART. | SRS |
| F005 | High | To allow manager to delete the staff detail from database and in PIC. | SRS |
| F006 | High | To allow manager to delete all staff from database and PIC. | SRS |
| F007 | High | To allow manager to view the door access report. | SRS |
| F008 | High | To allow manager to change password to a new one. | SRS |

**Table 2.2 Test Traceability Matrix**

## 2.3 Features To Be Tested

The following table contains the failures to be tested based on RESMART Software Requirement Specifications (SRS) for this iteration. Listed together are the function ID and its corresponding functions and estimated risk level.

|  |  |  |
| --- | --- | --- |
| **Function ID** | **Description** | **Risk Level** |
| F001 | To allow manager to login into RESMART. | High |
| F002 | To allow manager to add the staff to RESMART. | High |
| F003 | To allow manager to search name of staff in RESMART. | High |
| F004 | To allow manager to amend any data of the staff RESMART. | High |
| F005 | To allow manager to delete the staff detail from database and in PIC. | High |
| F006 | To allow manager to delete all staff from database and PIC. | High |
| F007 | To allow manager to view the door access report. | High |
| F008 | To allow manager to change password to a new one. | High |

**Table 2.2 Features To Be Tested**

## 2.4 Features Not To Be Tested

Aside from the features listed in Section 2.2, other aspects of the system are not covered in this test plan. This includes:

1. Operation procedure

This test plan is for system level test, operation procedure is not covered here.

1. Network security

This test plan is designed for functional test, security is not covered here.

## 2.5 Approach

The test on RESMART is a system level functional test that focuses only on the functional part of the system. Testing will be using risk-based strategy.

This test will also be a black-box test where test cases are derived using black box testing techniques such as:

1. Equivalence partitioning
2. Boundary value analysis
3. Decision table testing
4. State transition testing
5. Use case testing

Testing will be executed in 2 iteration. First iteration is testing functionality of Session Verification features and second iteration will be testing all other features( except for Session Verification feature) as defined in Feature To Be Tested section. Dedicated testing environment will be used as defined in section 3.2.

Any defect found will be fixed in next release version.

## 2.6 Item Pass/ Fail Criteria

The system must satisfy the following criteria in order to pass:

1. All test cases must be passed.
2. 0% calculation error in any function involving monetary transaction
3. No deadlock during operation.

Other than that, all test items must fulfill its requirement s stated in SRS.

## 2.7 Suspension Criteria and Resumption Requirements

Suspension Criteria:

In case where a Java-enabled environment is not available, all test will be suspended.

Resumption Requirement:

Java-enabled environment is prepared.

## 2.8 Test Deliverables

The following documents will be generated by the system test group and will be delivered during the system testing.

Test documentation:

1. Test Plan
2. Test Transmittal Report
3. Test Design Specifications
4. Test Case Specifications
5. Test Procedure Specifications
6. Test Logs
7. Test Incident Reports
8. Test Summary Report

## 2.9 Entry Criteria

The following items are needed before the testing can begin:

1. Requirements documents for ReSMART 1.1
2. Software Under Test: ReSMART 1.1

## 2.10 Exit Criteria

The following items are needed before the testing can end:

1. All Test Deliverables in Section 2.8 Test Deliverables have been delivered to client.
2. Test execution has been completed.
3. Open defect at the end of final iteration shall be:

* Zero fatal defects,
* Zero major defect
* <= three minor defects

# 

# 3.0 Test Management

## 3.1 Planned Tasked and Activities

The following tables shows the set of tasks necessary to prepare for and perform testing for ReSMART.

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Task** | **Activities** | **Target Date** |
| 1 | Test Planning and control | 1. Define test project scope and objectives 2. Requirement view 3. Identified risks, staffing and scheduling 4. Documenting test plan 5. Technical review 6. Submission and approval of test plan. |  |
| 2 | Test Analysis and Design | 1. Analyzed product 2. Develop test design specification 3. Prepare test case specification |  |
| 3 | Test Environment | 1. Setup ReSMART 2. Identify and acquired test data |  |
| 4 | Test Implementation and Execution | 1. Prepare test procedure specification 2. Perform smoke test 3. Perform functional test 4. Record test result 5. Analyze test result |  |
| 5 | Documenting Test Summary Report | 1. Summarize test result |  |
| 6 | Documenting Test Closure | 1. Collecting test process data from completed activities to consolidate experience, testware, facts and numbers. |  |
| 7 | Test Complete | 1. Delivery of product to client. |  |

## 3.2 Environment & Infrastructure

### 3.2.1 Hardware

The following tables shows the hardware requirements of ReSMART that will be used to install ReSMART.

|  |  |
| --- | --- |
| **Hardware Name** |  |
| **Manufacturer** |  |
| **Keyboard** |  |

**Table 3.2.1 ReSMART Hardware Requirements**

### 3.2.2 Software

The following tables shows the software requirements of ReSMART that will be used to install ReSMART.

|  |  |
| --- | --- |
| **Application Name** |  |
| **Version** |  |
| **Type of file** |  |
| **Size of Application** |  |
| **Size on Disk** |  |
| **Operating System** |  |

**Table 3.2.2 ReSMART Software Requirements**

### 3.2.3 Publications

The following documents are required to support system testing:

1. ReSMART System Requirements Specifications 1.0 (SRS)
2. ReSMART Software Design Specifications 1.0 (SDS)

## 3.3 Responsibility and Authority

|  |  |  |
| --- | --- | --- |
| Name | Roles | Responsibilities |
| Dr Abdul Rahman Ahmed Mohammed Al-Sewari | Test Manager | * Negotiating the ongoing purpose and deliverables of the test effort. * Ensuring the appropriate planning and management of the test resources. * Assessing the progress and effectiveness of the test effort. * Advocating the appropriate level of quality by the resolution of important defects. * Advocating an appropriate level of testability focus in the software development process. |
| Normaliana Che Zahari | Test Lead | * Deploying and managing the appropriate testing framework to meet the testing mandate. * Implementing and evolving appropriate measurements and metrics. * To be applied against the product under test. * To be applied against the Testing Team. * Planning, deploying, and managing the testing effort for any given engagement / release. * Managing and growing Testing assets required for meeting the testing mandate: * Team Members * Testing Tools * Testing Process * Retaining skilled testing personnel. |
| Razanalia Erma Razali  Nabila Zainal | Test Analysis | * Identifying the Target Test Items to be evaluated by the test effort. * Defining the appropriate tests required and any associated Test Data. * Gathering and managing the Test Data. * Evaluating the outcome of each test cycle. |
| Tengku Nazihah Ungku Setea  Afifah Zuhdi Binti Hashim | Tester | * Test Requirements Analysis. * Test Case Development / Updating. * Test Data preparation. * Test Execution and Results logging. * Defects Analysis & Reporting. * Re-tests for Fixes. |

**Table 3.3 Roles & Responsibilities**

## 3.4 Schedules, Estimates and Costs

This section will describe the project schedule and task milestones. The schedule will include estimated time that required for each testing task. Cost is not included for this testing.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Milestone** | **Days** | **Duration** |
| Test Planning and control | Submission of Test Plan for sign-off. | 1 | 28/11/2016 |
| Test Analysis and Design | Submission of Test Design Specification, Test Case Specification, and Test Procedure Specification. | 1 | 28/11/2016 |
| Test Environment | Setup of Test Environment | 1 | 25/11/2016 |
| Test Implementation and Execution | Execution of system test of ReSMART | 1 | 01/12/2016 |
| Documentary Test Summary Report | Submission of Test Summary Report | 1 | 01/12/2016 |
| Documenting Test Closure | Submission of Test Closure | 1 | 02/12/2016 |
| Test Complete | Delivery of product to client. | 1 | 04/12/2016 |

**Table 3.4 Estimated Testing Schedule**

# 4.0 General

## 4.1 Metrics

The following metrics will be collected and used to monitor the progress.

|  |  |  |
| --- | --- | --- |
| **Metric List** | **Metric Description** | **Goals** |
| Actual duration vs. plan (Variance) | Metric to monitor the project progress compared to the plan | Allow 100 % delay |
| Percentage of test cases run during test execution | Metric to monitor total number of test cases executed | 100 % |
| Percentages of the cases passed against total of test cases executed | Metric to monitor total number of test cases executed with Passed criteria | All high-risk test cases passed |
| Percentages of baseline requirement covered against total test cases | Metric to monitor total number of baseline requirement coverage | 100 % |

## 4.2 Glossary

|  |  |
| --- | --- |
| **Term** | **Definition** |
| SDS | Software Design Specification |
| SRS | Software Requirement Specification |
| ReSMART | Door Access Fingerprint with GSM |
| TP | Test Plan |

## 4.3 Incident Classification

|  |
| --- |
| Impact |
| Mission Critical : Application will not function or system fails  Major : Severe problems but possible to work around  Minor: Does not impact the functionality or usability of the process is not according to requirements/design specifications. |
| Priority |
| Immediate : Must be fixed as soon as possible  Delayed : System is unstable but incident must be fixed prior to next level of test or shipment.  Deferred : Defect can be left in if necessary due to time or costs. |