**Software Requirements Specification**

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| Flight Management System | Version: 3.2 |
| Software Requirements Specification | **Date: 01/06/2015** |

Revision History

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| --- | --- | --- | --- |
| Date | Version | Description | Author |
| 20/03/2015 | 1.0 | First SRS | Junyan Fan  Zheli Jiang  Sandon Joubert  Ruixi He |
| 21/03/2015 | 1.1 | |  | | --- | | Form the whole structure of the SRS (Introduction, Overall description, Specific requirements) | | Ruixi He |
| 27/03/2015 | 1.2 | |  | | --- | | Classify the specific requirements into three subsystem (Authentication, Project assignment and Effort estimation subsystem) | | Zheli Jiang  Ruixi He |
| 29/03/2015 | 1.3 | Modify details of specific requirements | Zheli Jiang  Ruixi He |
| 03/04/2015 | 1.4 | Add missing specific requirements related to Adimin | Zheli Jiang  Ruixi He |
| 17/04/2015 | 1.5 | Add non-functional requirements | Zheli Jiang  Ruixi He |
| 21/04/2015 | 2.0 | First Finalize SRS (Assignment1) | Junyan Fan  Zheli Jiang  Sandon Joubert  Ruixi He |
| 29/05/2015 | 3.0 | Rebuild all the SRS | Ruixi He |
| 31/05/2015 | 3.1 | Connect the requirements with use cases | Ruixi He |
| 02/06/2015 | 3.2 | Finalize SRS | Ruixi He |

4.1 Introduction

*4.1.1 Purpose*

The purpose of this document is to describe the specifications on the external behaviors of a flight management system. Besides, it also documents nonfunctional requirements, design constraints and other factors necessary to provide a complete and comprehensive understanding of the system.

The intended audience includes the potential users of the system and software development team.

*4.1.2 Scope*

The software system to be produced is a web-based flight management system.

Our system aims to serve four groups of user:

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| Roles | Purpose |
| Administrator | Maintain smooth operations of the system |
| Manager | Manage flight resources |
| Staff | Interact with manager and customer |
| General Public (Unregistered-Customer, Registered-Customer, Agency) | Use the system to book flights |

Our system has four subsystems:

* A Reservation System that manages (e.g. add, change, and modify) all flights reservations, seat selection, ticketing, flight availability, flight details, rates and conditions.
* A Profile Subsystem that manages individual passengers and travel agency profiles.
* A Service Subsystem that manages in-flight services such as food and drinks.
* A Reporting Subsystem to generate various summary report such as: Passengers Report for a day including the occupancy rate etc., various summary Cashier Reports like total revenue for the day, or weeks etc., Monthly Booking Activity Summary, Daily Booking Activity Summary, etc.

Different user groups have different powers. For example, agency is provided with discounts. Also, agency is able to see specific flight information that a normal customer cannot see despite the fact that agency belongs to general public group.

*4.1.3 Definitions, Acronyms, and Abbreviations*

Refer to Appendix.

*4.1.4 References*

* **Rational Unified Process**, SRS template (upedu\_srs.doc), COSC2151 Final Year Software Engineering Project , RMIT International University Vietnam, 2004
* Sample - SoftwareRequirementsSpecification.pdf

*4.1.5 Overview*

The rest of this Software Requirements Specification is divided into two main sections:

* The Overall Description (section 4.2) describes the general factors that affect the system and its requirements.
* The Specific Requirements (section 4.3) contains all software requirements that the system must meet in order to satisfy the needs of customer.

4.2 Overall Description

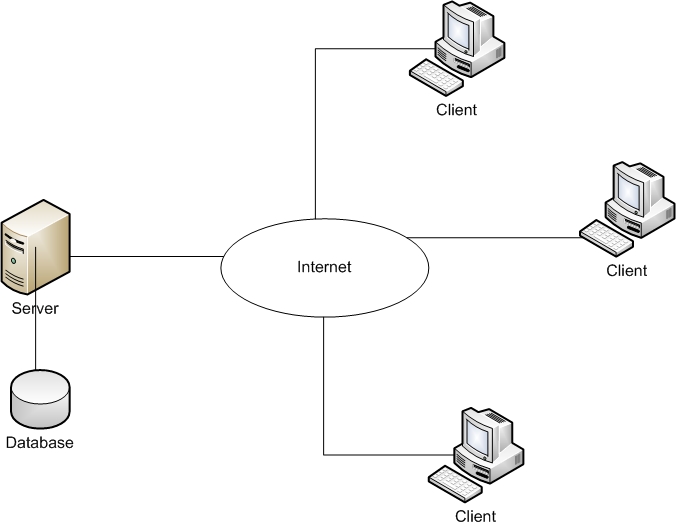
*4.2.1 Product Perspective*

Currently, some of the activities in some flight companies are carried out and managed manually, which makes the process of booking flights difficult to perform and requires an incredible amount of time and efforts.

Therefore, building this system appears necessary and essential. Flight Management System aims to be a perfect tool for achieving goals such as managing flights.

*4.2.1.1 System Interfaces*

The Flight Management System is a web-based application that allows users to interact with the system via internet or intranet.



The clients can simultaneously log into the system from any personal computer that has internet services, and then the clients can interact with the system to do reservation, view profiles, check flight information, etc.

The server takes and processes the clients' request and then retrieves the database and return the result to the clients.

The database is used to store the entire user's profiles, flight information, in-flight services.

*4.2.1.2 User Interfaces*

The user interface provided by the system must be GUI and must be accessible through any web-browser. Depending on the different privileges of the user, they will have slightly different interfaces and the access to slightly different functionalities of the system. For instance, admin has the highest privilege, which means he/she has the right to access all the functionalities provided by the system.

The database should be powered by MySQL server and performed indirectly through the GUIs provided by the system.

*4.2.1.3 Hardware Interfaces*

All components must be able to execute on any computer, which runs on any OS operation system with Java Running Environment.

*4.2.1.4 Software Interfaces*

4.2.1.4.1 User Interface

The user interacts with the system through web browser.

The system supports any web browser.

*4.2.1.5 Communication Interfaces*

The client machines must communicate with the Web Server over TCP/IP connection.

We might have the Web Server and the Database Server are located on different servers.

*4.2.1.6 Memory Constraints*

The client machine must be able to operate within 128MB minimum (including memory for browser)

The Web Server and the Database Server must be able to operate within 512MB minimum.

*4.2.1.7 Operations*

The Flight Management System needs to be easy to use for all users. For customers and agencies, we designed the GUI of this system based on the common sense, which means when the first time the customers or agencies use the system, they will know what’s this button does, and what the next screen will be. And the admin, managers and staff will also be very easy to get used to the functions of the system.

The server installation and maintenance should also be simple for the admin, and we will provide instruction material that teaches the admin how to install and maintain the system.

Backup and recovery must be specified in case of the network failure, database failure, out of power etc.

*4.2.2 Product Functions*

For administrators, our system allows them to manage personnel and they have the greatest power:

* Create user groups
* Promote staff
* Everything a manager or a staff can do

For managers, our system allows them to manage flights:

* Create flight
* Modify flight
* Order and manage services on plane

For staff, they can do modification to flights:

* Switch seats

For public (customer), different types of customer have different rights:

* Agency can have discounts
* Agency can view more specific flight information than regular customers

All functionalities of the system are built on the needs of any flight management system so that this system can make all activities and tasks carried out by users easier and more convenient.

*4.2.3 User Characteristics*

The users of Flight Management System include system administrators, managers, staff and general public.

* Administrators have strong knowledge on networks and web applications to be able to install and maintain the system.
* Managers have good knowledge on web applications and flight information.
* Staff has solid understanding of flights and good interaction skills.
* General public are people who have enough understanding on the use of Internet to use the system.

*4.2.4 Constraints*

The system should strictly obey and satisfy the following constraints:

* Authentication security: the system should enforce user authentication security
* Access control: the system must provide appropriate access right and user interface to each type of user.
* Backup and recovery: the backup and recovery of all the system’s database must be easy to perform to prevent databases from corruption and loss risks
* Integrity control: since the system consists of many databases that are correlated with each other, integrity among these databases must be strictly maintained

*4.2.5 Assumptions and Dependencies*

The following assumptions and dependencies for the system are stated:

* All potential users must have access to Internet.
* All potential users must have a valid email address.

4.3 Specific Requirements

Each requirement (either functional or non-functional requirements) of Flight Management System is ranked based on its level of priority:

* Critical: highest priority level, these requirements are the core functionalities of Flight Management System and must be firstly implemented
* Essential: second priority level, these requirements are the important functionalities of Flight Management System and should be implemented when all the Critical requirements have been finished
* Desirable: medium priority level, these requirements are the necessary functionalities of Flight Management System and should be covered when Critical and Essential requirements have implemented
* Optional: lowest priority level, these requirements are the enhanced functionalities of Flight Management System and should be considered only when all Critical, Essential and Desirable requirements are completed

*4.3.1 Functional Requirements,*

This section includes all the functionalities that Flight Management System provides to System Admin, Flight Manager, Service Manager, Staff, and Customer

*4.3.1.1 Reservation Subsystem*

This section captures the functionalities that the Flight Management System provides to all users (System Admin, Flight Manager, Service Manager, Staff, Registered- customer, Unregistered-customer, Agency) manages (e.g. add, change, and modify) all flight reservations, seat selection, ticketing, flight availability, flight details, rates and conditions.

Flight Manager creates a new flight

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| **Requirement #: F\_4.3.1.1\_01** | **Requirement Type:** Functional | **Use Case #: RS\_11** |
| **Description:** This system should provide a Flight Manager with a GUI to create a new flight schedule. A flight schedule consists of Plane type, Origin place, Destination place, Depart time (dd/mm/yyyy hh:mm ss), Arrive time (dd/mm/yyyy hh:mm ss). | | |
| **Rationale:** A Flight Manager wants to create a new flight schedule. | | |
| **Source:** System Admin, Flight Manager | | |
| **Fit Criterion:** The new flight schedule can be created successfully. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Junyan Fan 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Flight Manager modify an existed flight

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| **Requirement #: F\_4.3.1.1\_02** | **Requirement Type:** Functional | **Use Case #: RS\_12** |
| **Description:** This system should provide a Flight Manager with a GUI to modify an existed flight schedule by choose the Origin place and Destination place. A flight schedule consists of Plane type, Origin place, Destination place, Depart time (dd/mm/yyyy hh:mm ss), Arrive time (dd/mm/yyyy hh:mm ss). | | |
| **Rationale:** A Flight Manager wants to modify an existed flight schedule. | | |
| **Source:** System Admin, Flight Manager | | |
| **Fit Criterion:** The flight schedule can be successfully deleted. | | |
| **Dependencies:** The to-be-modified flight schedule must exist. Refer to F\_4.3.1.1\_01. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |

System User searches flights

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| **Requirement #: F\_4.3.1.1\_03** | **Requirement Type:** Functional | **Use Case #: RS\_02** |
| **Description:** This system should provide all System User with a GUI to search flights.  Search criteria include: Origin place, Destination place, Depart time, Return flight or not, Return time, Number of Passengers.  Flight consists of Flight ID Source Airport, Departure time, Destination Airport, Arrive time. | | |
| **Rationale:** A System User wants to search flights. | | |
| **Source:** System Admin, Flight Manager, Service Manager, Staff, Registered-Customer, Unregistered-Customer, Agency | | |
| **Fit Criterion:** A GUI search form for flights should be displayed. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 27/03/2015 * Edited by Junyan Fan 01/04/2015 * Edited by Ruixi He 30/05/2015 | | |

Registered-Customer makes a flight booking

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| **Requirement #: F\_4.3.1.1\_04** | **Requirement Type:** Functional | **Use Case #: RS\_01** |
| **Description:** This system should provide a Registered-Customer with a GUI form to submit his request of a flight booking by choosing the classes and in-flight-service. | | |
| **Rationale:** A General Public wants to make a flight booking. | | |
| **Source:** Registered-Customer | | |
| **Fit Criterion:** A General Public can successfully make a flight booking. | | |
| **Dependencies:** The to-be-booked flight must exist. Refer to F\_4.3.1.1\_01. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Unregistered-Customer makes a flight booking

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| **Requirement #: F\_4.3.1.1\_05** | **Requirement Type:** Functional | **Use Case #: RS\_14** |
| **Description:** This system should provide an Unregistered-Customer with a GUI form to submit his request of a flight booking by choosing the classes and in-flight-service. Additionally input the information of the passenger.  Passenger information includes Title, First name, Last name, Gender, Date of birth, Phone, Email, Address, City, Country, Credit card number, option of passport holder. | | |
| **Rationale:** A General Public wants to make a flight booking. | | |
| **Source:** Registered-Customer Unregistered-Customer | | |
| **Fit Criterion:** A General Public can successfully make a flight booking. | | |
| **Dependencies:** The to-be-booked flight must exist. Refer to F\_4.3.1.1\_01. | | |
| **Rank of Importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Agency makes flight booking for customer

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| **Requirement #: F\_4.3.1.1\_06** | **Requirement Type:** Functional | **Use Case #: RS\_06** |
| **Description:** This system should provide an Agency with a GUI form to submit his request of a flight booking by choosing the classes and in-flight-service. Additionally choose the costumer form their list.  . | | |
| **Rationale:** A Customer asks Agency for help to make a flight booking. | | |
| **Source:** Agency | | |
| **Fit Criterion:** An Agency can successfully make a flight booking for the customer. | | |
| **Dependencies:** The to-be-booked flight must exist. Refer to F\_4.3.1.1\_01. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Staff makes flight booking for customer

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| **Requirement #: F\_4.3.1.1\_07** | **Requirement Type:** Functional | **Use Case #: RS\_06** |
| **Description:** This system should provide a Staff with a GUI form to submit his request of a flight booking by choosing the classes and in-flight-service. Additionally input the information of the passenger.  Passenger information includes Title, First name, Last name, Gender, Date of birth, Phone, Email, Address, City, Country, Credit card number, option of passport holder. | | |
| **Rationale:** A Customer asks Staff for help to make a flight booking. | | |
| **Source:** System Admin, Flight Manger, Service Manager, Staff | | |
| **Fit Criterion:** A Staff can successfully make a flight booking for the customer. | | |
| **Dependencies:** The to-be-booked flight must exist. Refer to F\_4.3.1.1\_01. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Ruixi He 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Registered-Customer views owned flight bookings

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| **Requirement #: F\_4.3.1.1\_08** | **Requirement Type:** Functional | **Use Case #: RS\_04** |
| **Description:** This system should provide a Registered-Customer with a GUI to view his/her flight bookings. | | |
| **Rationale:** A Registered-Customer wants to view his/her bookings. | | |
| **Source:** Registered-Customer | | |
| **Fit Criterion:** The list of flight bookings should be displayed. | | |
| **Dependencies:** The to-be-viewed flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Registered-Customer changes seat of existed booking

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| **Requirement #: F\_4.3.1.1\_09** | **Requirement Type:** Functional | **Use Case #: RS\_03** |
| **Description:** This system should provide a Registered-Customer with a GUI to change the seat of an existed booking. | | |
| **Rationale:** A Registered-Customer wants to change seat of existed flight booking. | | |
| **Source:** Registered-Customer | | |
| **Fit Criterion:** The seat can be changed successfully. | | |
| **Dependencies:** The to-be-changed-seat flight must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Registered-Customer changes existed flight booking

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| --- | --- | --- |
| **Requirement #: F\_4.3.1.1\_10** | **Requirement Type:** Functional | **Use Case #: RS\_05** |
| **Description:** This system should provide a Registered-Customer with a GUI to change an existed booking. | | |
| **Rationale:** A Registered-Customer wants to change an existed flight booking. | | |
| **Source:** Registered-Customer | | |
| **Fit Criterion:** The flight booking can be changed successfully. | | |
| **Dependencies:** The to-be-changed flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Agency searches and views member customer bookings

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| **Requirement #: F\_4.3.1.1\_11** | **Requirement Type:** Functional | **Use Case #:** |
| **Description:** This system should provide an Agency with a GUI to searches view the member customer flight bookings. | | |
| **Rationale:** An Agency wants to search and view the flight bookings of their member customers. | | |
| **Source:** Agency | | |
| **Fit Criterion:** The list of flight bookings can be displayed successfully. | | |
| **Dependencies:** The-to-be-viewed flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Agency changes seat for member customer

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| **Requirement #: F\_4.3.1.1\_12** | **Requirement Type:** Functional | **Use Case #: RS\_08** |
| **Description:** This system should provide an Agency with a GUI to change the seat for their member customer. | | |
| **Rationale:** An Agency wants to change seat for their member customer. | | |
| **Source:** Agency | | |
| **Fit Criterion:** The seat can be changed successfully. | | |
| **Dependencies:** The to-be-changed-seat flight must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Agency changes flight booking for member customer

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| **Requirement #: F\_4.3.1.1\_13** | **Requirement Type:** Functional | **Use Case #: RS\_09** |
| **Description:** This system should provide an Agency with a GUI to change the flight booking for their member customer. | | |
| **Rationale:** An Agency wants to change the flight booking for their member customer. | | |
| **Source:** Agency | | |
| **Fit Criterion:** The flight booking can be changed successfully. | | |
| **Dependencies:** The to-be-changed flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Staff searches and views customer bookings

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| **Requirement #: F\_4.3.1.1\_14** | **Requirement Type:** Functional | **Use Case #: RS\_07** |
| **Description:** This system should provide a Staff with a GUI to searches view the customer flight bookings. | | |
| **Rationale:** A Staff wants to search and view the flight bookings of customers. | | |
| **Source:** System Admin , Flight Manager, Service Manager, Staff | | |
| **Fit Criterion:** The list of flight bookings can be displayed successfully. | | |
| **Dependencies:** The-to-be-viewed flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Ruixi He 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Staff changes seat for customer

|  |  |  |
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| **Requirement #: F\_4.3.1.1\_15** | **Requirement Type:** Functional | **Use Case #: RS\_08** |
| **Description:** This system should provide a Staff with a GUI to change the seat for their member customer. | | |
| **Rationale:** A Staff wants to change seat the customer. | | |
| **Source:** System Admin , Flight Manager, Service Manager, Staff | | |
| **Fit Criterion:** The seat can be changed successfully. | | |
| **Dependencies:** The to-be-changed-seat flight must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Ruixi He 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Staff switches seat for two existed customers

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| **Requirement #: F\_4.3.1.1\_16** | **Requirement Type:** Functional | **Use Case #: RS\_10** |
| **Description:** This system should provide a Staff with a GUI to switch seats for two existed customers. | | |
| **Rationale:** A Staff wants to switch seats for two existed customers. | | |
| **Source:** System Admin , Flight Manager, Service Manager, Staff | | |
| **Fit Criterion:** The seats can be switched successfully. | | |
| **Dependencies:** The to-be-switched-seat flight must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Ruixi He 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

Staff changes flight booking for customer

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.1\_17** | **Requirement Type:** Functional | **Use Case #: RS\_09** |
| **Description:** This system should provide a Staff with a GUI to change the flight booking for their member customer. | | |
| **Rationale:** A Staff wants to change the flight booking for the customer. | | |
| **Source:** System Admin , Flight Manager, Service Manager, Staff | | |
| **Fit Criterion:** The flight booking can be changed successfully. | | |
| **Dependencies:** The to-be-changed flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Ruixi He 27/03/2015 * Edited by Ruixi He 30/05/2015 | | |

*4.3.1.2 Profile Subsystem*

This section captures the functionalities that the Flight Management System provides to all users (System Admin, Flight Manager, Service Manager, Staff, Registered- customer, Unregistered-customer, Agency) manages not only individual passengers and travel agency profiles, but also the profile of the company employee (System Admin, Manager, Staff).

System User login

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| **Requirement #: F\_4.3.1.2\_01** | **Requirement Type:** Functional | **Use Case #: PS\_02** |
| **Description:** This system should provide all System User a GUI to login to the system.  Login critical of Customer: Email and password.  Login critical of Employee: User name and password. | | |
| **Rationale:** A System User wants to login to the system. | | |
| **Source:** System Admin , Flight Manager, Service Manager, Staff, Registered-Customer, Agency | | |
| **Fit Criterion:** The System User login successfully, and the main page displayed. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Junyan Fan 27/03/2015 * Edited by Ruixi He 31/05/2015 | | |

System User logout

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.2\_02** | **Requirement Type:** Functional | **Use Case #: PS\_03** |
| **Description:** This system should provide all System User a GUI to logout the system. | | |
| **Rationale:** A System User wants to logout the system. | | |
| **Source:** System Admin , Flight Manager, Service Manager, Staff, Registered-Customer, Agency | | |
| **Fit Criterion:** The System User logout successfully, and the first page displayed. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Junyan Fan 27/03/2015 * Edited by Ruixi He 31/05/2015 | | |

System User change user name or password

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| **Requirement #: F\_4.3.1.2\_03** | **Requirement Type:** Functional | **Use Case #: PS\_04** |
| **Description:** This system should provide all System User a GUI to change the user name or password in the system.  The user name of a Customer or Agency is email. | | |
| **Rationale:** A System User wants to change user name or password in the system. | | |
| **Source:** System Admin , Flight Manager, Service Manager, Staff, Registered-Customer, Agency | | |
| **Fit Criterion:** The user name or password can be changed successfully. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Junyan Fan 27/03/2015 * Edited by Ruixi He 31/05/2015 | | |

System Admin create staff user

|  |  |  |
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| **Requirement #: F\_4.3.1.2\_04** | **Requirement Type:** Functional | **Use Case #: PS\_11** |
| **Description:** This system should provide a System Admin a GUI to create a new staff user in the system. A staff user consists of Authority, User name, Password. | | |
| **Rationale:** A System User wants to create a new staff user in the system. | | |
| **Source:** System Admin | | |
| **Fit Criterion:** The new staff user can be created successfully. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Zheli Jiang 25/03/2015 * Edited by Ruixi He 31/05/2015 | | |

System Admin search staff user

|  |  |  |
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| **Requirement #: F\_4.3.1.2\_05** | **Requirement Type:** Functional | **Use Case #: PS\_12** |
| **Description:** This system should provide a System Admin a GUI to search an existed staff user in the system.  Search critical is User name. | | |
| **Rationale:** A System User wants to search existed staff user in the system. | | |
| **Source:** System Admin | | |
| **Fit Criterion:** The to-be-searched staff user displayed successfully. | | |
| **Dependencies:** The to-be-searched staff user must exist. Refer to F\_4.3.1.2\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Zheli Jiang 25/03/2015 * Edited by Ruixi He 31/05/2015 | | |

System Admin modify staff user

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.2\_06** | **Requirement Type:** Functional | **Use Case #: PS\_13** |
| **Description:** This system should provide a System Admin a GUI to modify an existed staff user in the system. System Admin can modify the Authority, User name and Password. | | |
| **Rationale:** A System User wants to modify existed staff user in the system. | | |
| **Source:** System Admin | | |
| **Fit Criterion:** The staff user can be modified successfully. | | |
| **Dependencies:** The to-be-modified staff user must exist. Refer to F\_4.3.1.2\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Zheli Jiang 25/03/2015 * Edited by Ruixi He 31/05/2015 | | |

Staff User search customer

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.2\_07** | **Requirement Type:** Functional | **Use Case #: PS\_14** |
| **Description:** This system should provide all Staff User a GUI to search an existed Customer in the system.  Search critical is Email. | | |
| **Rationale:** A System User wants to search existed Customer in the system. | | |
| **Source:** System Admin , Flight Manager, Service Manager, Staff | | |
| **Fit Criterion:** The to-be-searched Customer displayed successfully. | | |
| **Dependencies:** The to-be-searched customer must exist. Refer to F\_4.3.1.2\_16. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Zheli Jiang 25/03/2015 * Edited by Junyan Fan 01/04/2015 * Edited by Ruixi He 31/05/2015 | | |

Staff User modify customer details

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.2\_08** | **Requirement Type:** Functional | **Use Case #: PS\_15** |
| **Description:** This system should provide all Staff User a GUI to modify an existed customer in the system. A Customer consists of Title, First name, Last name, Gender, Date of birth, Phone, Email, Address, City, Country, Credit card number, option of passport holder. | | |
| **Rationale:** A System User wants to modify existed Customer in the system. | | |
| **Source:** System Admin , Flight Manager, Service Manager, Staff | | |
| **Fit Criterion:** The customer detail can be modified successfully. | | |
| **Dependencies:** The to-be-modified customer must exist. Refer to F\_4.3.1.2\_16. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Zheli Jiang 25/03/2015 * Edited by Ruixi He 31/05/2015 | | |

Agency modify business information

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.2\_09** | **Requirement Type:** Functional | **Use Case #: PS\_07** |
| **Description:** This system should provide an Agency a GUI to modify their business information. An Agency consists of Name, Phone, and Email. | | |
| **Rationale:** An Agency wants to modify existed the business information in the system. | | |
| **Source:** Agency | | |
| **Fit Criterion:** The business information can be modified successfully. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 01/04/2015 * Edited by Ruixi He 31/05/2015 | | |

Agency add member customer

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.2\_10** | **Requirement Type:** Functional | **Use Case #: PS\_08** |
| **Description:** This system should provide an Agency a GUI to add an existed Customer as their member customer by enter the email of the existed Customer. | | |
| **Rationale:** An Agency wants to add an existed Customer as their member customer in the system. | | |
| **Source:** Agency | | |
| **Fit Criterion:** The Customer can be added as member customer successfully. | | |
| **Dependencies:** The to-be-added customer must exist. Refer to F\_4.3.1.2\_16. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 01/04/2015 * Edited by Ruixi He 31/05/2015 | | |

Agency view member customer

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.2\_11** | **Requirement Type:** Functional | **Use Case #: PS\_10** |
| **Description:** This system should provide an Agency a GUI to view all existed member customer. | | |
| **Rationale:** An Agency wants to view all existed member customer in the system. | | |
| **Source:** Agency | | |
| **Fit Criterion:** The member customers can be displayed successfully. | | |
| **Dependencies:** The to-be-viewed member customer must exist. Refer to F\_4.3.1.2\_10. | | |
| **Rank of Importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 01/04/2015 * Edited by Ruixi He 31/05/2015 | | |

Agency removes member customer

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.2\_12** | **Requirement Type:** Functional | **Use Case #: PS\_09** |
| **Description:** This system should provide an Agency a GUI to delete an existed member customer from the list in the system. | | |
| **Rationale:** An Agency wants to delete an existed member customer from the list in the system. | | |
| **Source:** Agency | | |
| **Fit Criterion:** The member customer removed successfully. | | |
| **Dependencies:** The to-be-removed member customer must exist. Refer to F\_4.3.1.2\_10. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 01/04/2015 * Edited by Ruixi He 31/05/2015 | | |

Customer modify personal details

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.2\_13** | **Requirement Type:** Functional | **Use Case #: PS\_05** |
| **Description:** This system should provide a Registered-Customer a GUI to modify the personal details in the system. A Customer consists of Title, First name, Last name, Gender, Date of birth, Phone, Email, Address, City, Country, Credit card number, option of passport holder. | | |
| **Rationale:** A Registered-Customer wants to modify personal details in the system. | | |
| **Source:** Registered-Customer | | |
| **Fit Criterion:** The personal details can be modified successfully. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 01/04/2015 * Edited by Ruixi He 31/05/2015 | | |

Customer modify credit card details

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.2\_14** | **Requirement Type:** Functional | **Use Case #: PS\_06** |
| **Description:** This system should provide a Registered-Customer a GUI to modify the credit card details in the system. A credit card includes credit card type Title, credit card number. | | |
| **Rationale:** A Registered-Customer wants to modify credit card details in the system. | | |
| **Source:** Registered-Customer | | |
| **Fit Criterion:** The credit card details can be modified successfully. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 01/04/2015 * Edited by Ruixi He 31/05/2015 | | |

Unregistered-Customer registers user account

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.2\_15** | **Requirement Type:** Functional | **Use Case #: PS\_01** |
| **Description:** This system should provide a Unregistered-Customer a GUI to register a user account in the system. A Customer consists of Title, First name, Last name, Gender, Date of birth, Phone, Email, Address, City, Country, Credit card number, option of passport holder. | | |
| **Rationale:** A Unregistered-Customer wants to register a user account in the system. | | |
| **Source:** Unregistered-Customer | | |
| **Fit Criterion:** The Customer user account can be created successfully. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 01/04/2015 * Edited by Ruixi He 31/05/2015 | | |

*4.3.1.3 Service Subsystem*

This section captures the functionalities that the Flight Management System provides to all users (System Admin, Flight Manager, Service Manager, Staff, Registered- customer, Unregistered-customer, Agency) manages (e.g. add, edit, delete) all in-flight services such as food and drinks.

Service Manager add in-flight service

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| --- | --- | --- |
| **Requirement #: F\_4.3.1.3\_01** | **Requirement Type:** Functional | **Use Case #: SS\_01** |
| **Description:** This system should provide a Service Manager a GUI to add a new in-flight service in the system. An in-flight service consists of Item name, Cost, Availability. | | |
| **Rationale:** A Service Manager wants to add a new in-flight service in the system. | | |
| **Source:** System Admin, Service Manager | | |
| **Fit Criterion:** The new in-flight service can be added successfully. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Junyan Fan 27/03/2015 * Edited by Ruixi He 31/05/2015 | | |

Service Manger view in-flight service

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.3\_02** | **Requirement Type:** Functional | **Use Case #: SS\_04** |
| **Description:** This system should provide a Service Manager a GUI form to view all in-flight services in the system. | | |
| **Rationale:** A Service Manager wants to view all in-flight services in the system. | | |
| **Source:** System Admin, Service Manager | | |
| **Fit Criterion:** The GUI form list all the in-flight services displayed. | | |
| **Dependencies:** The to-be-view in-flight services must exist. Refer to F\_4.3.1.3\_01. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Junyan Fan 27/03/2015 * Edited by Ruixi He 31/05/2015 | | |

Service Manager edits in-flight service

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.3\_03** | **Requirement Type:** Functional | **Use Case #: SS\_02** |
| **Description:** This system should provide a Service Manager a GUI to edit existed in-flight services in the system. | | |
| **Rationale:** A Service Manager wants to edit existed in-flight services in the system. | | |
| **Source:** System Admin, Service Manager | | |
| **Fit Criterion:** The in-flight service can be edited successfully. | | |
| **Dependencies:** The to-be-edited in-flight services must exist. Refer to F\_4.3.1.3\_01. | | |
| **Rank of Importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Junyan Fan 27/03/2015 * Edited by Ruixi He 31/05/2015 | | |

Service Manager deletes in-flight service

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.3\_04** | **Requirement Type:** Functional | **Use Case #: SS\_03** |
| **Description:** This system should provide a Service Manager a GUI to delete existed in-flight services in the system. | | |
| **Rationale:** A Service Manager wants to delete existed in-flight services in the system. | | |
| **Source:** System Admin, Service Manager | | |
| **Fit Criterion:** The in-flight service can be deleted successfully. | | |
| **Dependencies:** The to-be-deleted in-flight services must exist. Refer to F\_4.3.1.3\_01. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Junyan Fan 27/03/2015 * Edited by Ruixi He 31/05/2015 | | |

Staff adds in-flight service for customer

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.3\_05** | **Requirement Type:** Functional | **Use Case #: SS\_05** |
| **Description:** This system should provide a Staff a GUI to add in-flight service to an existed flight booking for customer in the system. | | |
| **Rationale:** A Staff wants to add in-flight service to an existed flight booking for customer in the system. | | |
| **Source:** System Admin, Flight Manager, Service Manager, Staff | | |
| **Fit Criterion:** The in-flight service can be added successfully. | | |
| **Dependencies:** The to-be-added flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Ruixi He 27/03/2015 * Edited by Ruixi He 31/05/2015 | | |

Staff deletes in-flight service for customer

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.3\_06** | **Requirement Type:** Functional | **Use Case #: SS\_06** |
| **Description:** This system should provide a Staff a GUI to delete in-flight service from an existed flight booking for customer in the system. | | |
| **Rationale:** A Staff wants to delete in-flight service from an existed flight booking for customer in the system. | | |
| **Source:** System Admin, Flight Manager, Service Manager, Staff | | |
| **Fit Criterion:** The in-flight service can be deleted successfully. | | |
| **Dependencies:** The to-be-deleted flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Ruixi He 27/03/2015 * Edited by Ruixi He 31/05/2015 | | |

Agency adds in-flight service for customer

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.3\_07** | **Requirement Type:** Functional | **Use Case #: SS\_05** |
| **Description:** This system should provide an Agency a GUI to add in-flight service to an existed flight booking for member customer in the system. | | |
| **Rationale:** An Agency wants to add in-flight service to an existed flight booking for member customer in the system. | | |
| **Source:** Agency | | |
| **Fit Criterion:** The in-flight service can be added successfully. | | |
| **Dependencies:** The to-be-added flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Ruixi He 27/03/2015 * Edited by Ruixi He 31/05/2015 | | |

Agency deletes in-flight service for customer

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.3\_08** | **Requirement Type:** Functional | **Use Case #: SS\_06** |
| **Description:** This system should provide an Agency a GUI to delete in-flight service from an existed flight booking for member customer in the system. | | |
| **Rationale:** An Agency wants to delete in-flight service from an existed flight booking for member customer in the system. | | |
| **Source:** Agency | | |
| **Fit Criterion:** The in-flight service can be deleted successfully. | | |
| **Dependencies:** The to-be-deleted flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 01/04/2015 * Edited by Ruixi He 31/05/2015 | | |

Registered-Customer adds in-flight service for an existed flight booking

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.3\_09** | **Requirement Type:** Functional | **Use Case #: SS\_08** |
| **Description:** This system should provide a Registered-Customer a GUI to add in-flight service to his/her flight booking in the system. | | |
| **Rationale:** A Registered-Customer wants to add in-flight service to his/her flight booking for member customer in the system. | | |
| **Source:** Registered-Customer | | |
| **Fit Criterion:** The in-flight service can be added successfully. | | |
| **Dependencies:** The to-be-added flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 01/04/2015 * Edited by Ruixi He 31/05/2015 | | |

Registered-Customer deletes in-flight service for an existed flight booking

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.3\_10** | **Requirement Type:** Functional | **Use Case #: SS\_09** |
| **Description:** This system should provide a Registered-Customer a GUI to delete in-flight service from his/her flight booking in the system. | | |
| **Rationale:** An Agency wants to delete in-flight service from his/her flight booking in the system. | | |
| **Source:** Registered-Customer | | |
| **Fit Criterion:** The in-flight service can be deleted successfully. | | |
| **Dependencies:** The to-be-deleted flight booking must exist. Refer to F\_4.3.1.1\_04. | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Created by Sandon Joubert 01/04/2015 * Edited by Ruixi He 31/05/2015 | | |

*4.3.1.4 Reporting Subsystem*

This section captures the functionalities that the Flight Management System provides to all users (System Admin, Flight Manager, Service Manager, Staff, Registered- customer, Unregistered-customer, Agency) to generate various summary reports such as: Passengers Report for a day including the occupancy rate etc., various summary Cashier Reports like total revenue for the day, or weeks etc., Monthly Booking Activity Summary, Daily Booking Activity Summary, etc.

Customer generates customer report

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.4\_01** | **Requirement Type:** Functional | **Use Case #: RP\_01** |
| **Description:** This system should provide a Registered-Customer a GUI to generate the customer report in the system. | | |
| **Rationale:** A Registered-Customer wants to generate customer report. | | |
| **Source:** Registered-Customer | | |
| **Fit Criterion:** The GUI report can be displayed successfully. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Create by Sandon Joubert 01/04/2015 * Edited by Ruixi He 01/06/2015 | | |

Agency generates agency report

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.4\_02** | **Requirement Type:** Functional | **Use Case #: RP\_02** |
| **Description:** This system should provide an Agency a GUI to generate the agnecy report in the system. | | |
| **Rationale:** An Agency wants to generate agency report. | | |
| **Source:** Agency | | |
| **Fit Criterion:** The GUI report can be displayed successfully. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Create by Sandon Joubert 01/04/2015 * Edited by Ruixi He 01/06/2015 | | |

Staff user generates staff report

|  |  |  |
| --- | --- | --- |
| **Requirement #: F\_4.3.1.4\_03** | **Requirement Type:** Functional | **Use Case #: RP\_03** |
| **Description:** This system should provide a staff user a GUI to generate the staff report in the system. | | |
| **Rationale:** A staff user wants to generate staff report. | | |
| **Source:** System Admin, Flight Manager, Service Manager, Staff | | |
| **Fit Criterion:** The GUI report can be displayed successfully. | | |
| **Dependencies:** None | | |
| **Rank of Importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:**   * Create by Sandon Joubert 01/04/2015 * Edited by Ruixi He 01/06/2015 | | |

*4.3.2 Non-functional Requirements*

|  |  |  |
| --- | --- | --- |
| **Requirement #:**  **N\_4.3.2\_01** | **Requirement Type:**  Performance | **Use Case# :** |
| **Description:** The login process should not take longer than 10 seconds. | | |
| **Rationale:** User login quickly. | | |
| **Source:** System Admin, Manager, Member | | |
| **Fit Criterion:** The login process take in 10 seconds. | | |
| **Dependencies:** None | | |
| **Rank of importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:** Created by Ruixi He, Zheli Jiang 03/25/2015 | | |

|  |  |  |
| --- | --- | --- |
| **Requirement:**  **N\_4.3.2\_02** | **Requirement Type:**  Performance | **Use Case# :** |
| **Description:** The system must not take longer than 10 seconds to generate each of the analysis. | | |
| **Rationale:** A user wants to receive results quickly. | | |
| **Source:** System Admin, Manager, Member | | |
| **Fit Criterion:** The System generate each of the analysis in 10 seconds. | | |
| **Dependencies:** None | | |
| **Rank of importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:** Created by Ruixi He, Zheli Jiang 03/25/2015 | | |

|  |  |  |
| --- | --- | --- |
| **Requirement #:**  **N\_4.3.2\_03** | **Requirement Type:**  Usability | **Use Case# :** |
| **Description:** The system should support GUI in English and other languages. | | |
| **Rationale:** A user wants to use the system in his mother language. | | |
| **Source:** System Admin, Manager, Member | | |
| **Fit Criterion:** The system GUI should be displayed in the language set by every user. | | |
| **Dependencies:** None | | |
| **Rank of importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:** Created by Ruixi He, Zheli Jiang 03/25/2015 | | |

|  |  |  |
| --- | --- | --- |
| **Requirement #:**  **N\_4.3.2\_04** | **Requirement Type:**  Help | **Use Case# :** |
| **Description:** The system should have user manual to instruct the users to use the system. | | |
| **Rationale:** To help user use the system. | | |
| **Source:** System Admin, Manager, Member | | |
| **Fit Criterion:** The system should have user manual to instruct the users to use the system. | | |
| **Dependencies:** None | | |
| **Rank of importance:** Essential | | |
| **Supporting Materials:** None | | |
| **History:** Created by Ruixi He, Zheli Jiang 03/25/2015 | | |

|  |  |  |
| --- | --- | --- |
| **Requirement #:**  **N\_4.3.2\_05** | **Requirement Type:**  Security | **Use Case# :** |
| **Description:** The system should automatically log out after 5 minutes of being idle and ask the user to re-log in. | | |
| **Rationale:** To control authorized usage of the system. | | |
| **Source:** System Admin, Manager, Member | | |
| **Fit Criterion:** The system should automatically log out after ten minutes of being idle. | | |
| **Dependencies:** None | | |
| **Rank of importance:** Desirable | | |
| **Supporting Materials:** None | | |
| **History:** Created by Ruixi He, Zheli Jiang 03/25/2015 | | |