

**E-Library System
Software Requirements Specifications**

Version 3.0

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Revision History

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Software Requirements Specification

1. Introduction

1.1 Purpose

The purpose of this document is to describe the specifications on the external behaviors of an electronic library system. It also documents nonfunctional requirements, design constraints and other factors necessary to provide a complete and comprehensive understanding of the To-Be system.

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

1.2 Scope

The software system to be produced is a web-based electronic library system, which will be referred to as "E-Library system" thorough this document.

E-Library system aims to serve two groups of users – librarian and borrower of the organization which is going to use it – and to be under control of system administrator. The purposes of administrator and librarian are to maintain smooth operations of the system and to manage library resources (which include In-library resources and E-resources – [section 1.3](#)) respectively. The need of borrowers, whereas, is to actually use library resources. In order to satisfy all potential customers and to effectively manage its functions, E-Library system is developed into four modules, each of which is an independent but correlated subsystem.

- Users Management Subsystem manages profiles of all users of E-Library system
- Resources Management Subsystem manages profiles of all resources of E-Library system
- Library Activities Management Subsystem manages all activities, processes and transactions occurring within E-Library system, e.g. borrowing and reserving resources
- System Configuration Management Subsystem manages configuration settings and operations of E-Library system

E-Library also supports the use of barcode scanner for reading and manipulating barcodes of books, CDs, DVDs etc and borrower ID cards. With this feature, the process of managing library resource profiles and library activities (borrowing and returning resources) is much more convenient for users.

Although E-Library system is built to assist its users in managing and using library resources, it is impossible to replace a library with this system. Some typical processes of a library cannot be simulated or captured by E-Library system, which causes the following limitations:

- Borrowers still have to see librarians directly to borrow and to return resources
- Users can only keep track of names, categories, titles, authors etc of the in-library resources, but not their real contents

1.3 Definitions, Acronyms, and Abbreviations

Refer to Glossary.doc

1.4 References

- **Rational Unified Process**, SRS template (upedu_srs.doc), COSC2151 Final Year Software Engineering Project , RMIT International University Vietnam, 2004
- **Ecole Polytechnique de Montreal**, *Time Monitoring Tool – Software Requirements Specifications*, SRS example (upedu_ex_srs.pdf) – COSC2151 Final Year Software Engineering Project – RMIT University Vietnam, 2004
- **Volere**, Template to specify a requirement (req_spe_template.doc) – COSC2151 Final Year

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Software Engineering Project – RMIT University Vietnam, 2004

1.5 Overview

The rest of this document is divided into two main sections:

- The Overall Description (section 2) describes the general factors that affect the system and its requirements.
- The Specific Requirements (section 3) contains all software requirements that the system must meet in order to satisfy customer's needs.

2. Overall Description

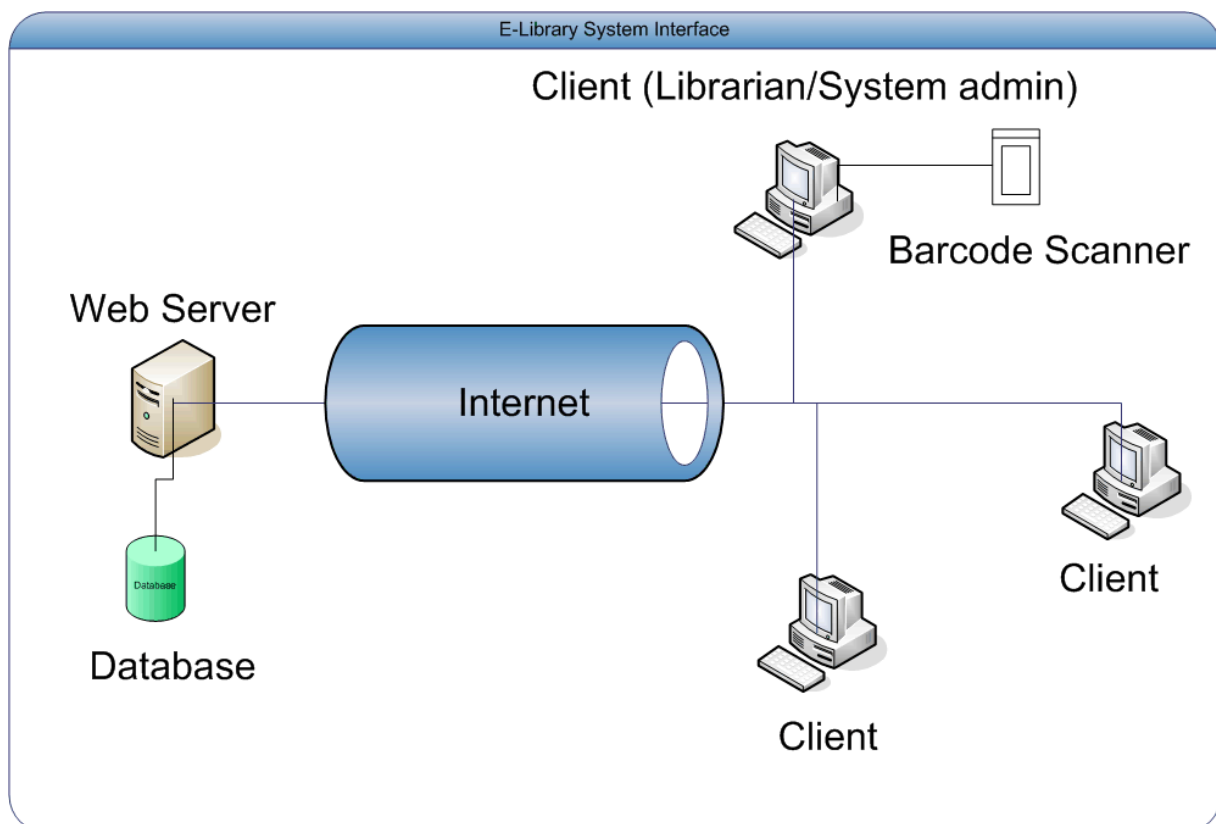
2.1 Product perspective

Currently, all activities occur in most libraries are carried out and managed manually, which makes the processes of borrowing, returning and keeping track of library resources difficult to perform and requires a huge amount of time and efforts.

From this nature it is raised the need of building a tool which effectively assists librarians and borrowers in managing and utilizing the library facilities. E-Library system aims to be a perfect tool for achieving these goals.

2.1.1 System Interfaces

The E-Library to be developed is a web-based application that can be integrated to an organization's Intranet or deployed on the Internet.



The *Clients* can simultaneously log into the system from any PC that supports Internet services and then

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interact with the system for their purposes, such as searching resources, viewing e-resources, borrowing resources online or reserving unavailable resources.

The *Barcode Scanner* is connected to librarian's client machine to read and manipulate barcodes of books, CDs, DVDs etc. User ID cards can also be read by *Barcode Scanners* associated with PCs of librarian and system admin.

The *Web Server* allows client machines to connect to E-Library system and serves their needs via a set of web pages. It acts as a mechanism to accept and process client requests, then retrieve the database and finally return the results to these requests.

The *Database* is used to store the system's user profiles and the library's resource profiles and activities.

2.1.2 User Interfaces

The user interfaces provided to client machines must be GUI and must be accessible through any web browser such as IE, Mozilla, FireFox, Opera etc. The user interfaces offered to librarians are different from those offered to borrowers.

E-Library system's administrators also connect to the system via web browser like other users but have higher access right to the system, which is captured in their own user interface.

All accesses to the Database, which is powered by MySQL server, must be performed indirectly through GUIs provided by E-Library system.

2.1.3 Hardware Interfaces

All components must be able to execute on a personal computer.

2.1.4 Software Interfaces

2.1.4.1 External System Interface:

- The system is able to import existing user accounts from other system
- The system is able to import existing resource profiles from other system

2.1.4.2 User Interface:

- The user interact with the system through web browser
- The system supports both IE 5.5 or above and Netscape 7.0 or above

2.1.5 Communication Interfaces

- The client machines must communicate with the Web Server over TCP/IP connection
- The Web Server and the Database Server are located on different servers

2.1.6 Memory Constraints

- The client machine must be able to operate within 32MB minimum (including memory for browser)
- The Web Server and the Database Server must be able to operate within 128MB minimum

2.1.7 Operations

E-Library system must be easy for all users to use, e.g. no specific information or skills (except knowledge on how to access the Internet via Web browser) must be required to use the tool.

The Web Server installation and maintenance should be simple enough for a network administrator to perform and should not require any special technical skills from the administrator.

The Database Server should be able to import data from other external database systems.

Back up and Recovery operations must be specified in case of network failure, database failure, out of

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power etc.

2.2 Product functions

The two main functions of E-Library system are to manage library's resources and to utilize these resources in an online manner.

For librarians, E-Library system helps them to manage library resources through the following main functions:

- Manage library resource profiles. Each resource profile contains information of title, author, publisher, ISBN, quality etc
- Control library activities and processes, for example: borrowing and returning available resources, reserving unavailable resources etc
- Access (e.g. view, search and generate reports) borrower profiles. Each borrower profile contains some essential personal information and contact information of the borrower.

For borrowers, E-Library system helps them to use library resources through the following main functions:

- Borrow (in term of submitting their borrowing requests) and reserve in-library resources online
- View and download online resources

Additionally, E-Library system is controlled by administrators through the following main functions:

- Manage user profiles and accounts. Each user profile contains some essential personal information and contact information of the user.
- Define the system configuration settings and maintain the system operations

All functionalities of the system are built based on the business needs of any typical library so that E-Library system can make all activities and tasks carried out by librarians and borrowers easier and more convenient.

2.3 User characteristics

The users of E-Library system include system administrators, librarians and borrowers of the organization.

- Administrators have strong knowledge on networks and web applications to be able to install and maintain E-Library system
- Librarians are knowledgeable of the library activities and have solid understanding of all tasks, processes and resources they are working with
- Borrowers are people who have enough understanding on the use of Internet to use the system

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 (for instance, administrators and librarians are allowed to access resources profiles and borrower profiles while borrowers are not allowed to)
- Back up and recovery: the back up 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

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- The system must be developed using RMIT International University Vietnam facilities
- The system must be developed within seven months and must be released by the end of May 2005

2.5 Assumptions and dependencies

The following assumptions and dependencies for the system are stated:

- All potential users of E-Library system must have an email address
- All potential users of E-Library system must have a barcode number
- All resources of E-Library system must have a barcode number

3. Specific Requirements

Each requirement (either functional or non-functional one) of E-Library system is ranked based on its level of importance.

- Critical: highest importance level. Critical requirements are those that reflect core functionalities of E-Library system and must be firstly implemented
- Essential: second highest importance level. Essential requirements are those that reflect important functionalities of E-Library system and must be covered when Critical requirements have successfully implemented
- Desirable: medium importance level. Desirable requirements are those that reflect necessary but not critical functionalities of E-Library system and should be implemented when all Critical and Essential requirements have been fulfilled
- Optional: lowest importance level. Optional requirements are those that reflect enhanced functionalities of E-Library system and should be considered only when all Critical, Essential and Desirable requirements are completed

3.1 Functional Requirements

3.1.1 Users Management Subsystem

This section captures functionalities that E-Library system provides to System Admin, Librarian and Borrower to manage user profiles, including importing, adding, editing, deleting, enabling and disabling, searching and generating reports of user profiles.

3.1.1.1 Administrator Side

This section includes all functions that system admin can use to manage the configuration of system, borrower profile and status of each borrower account.

Requirement #: F_3.1.1.1_01	Requirement Type: Functional	Use case #: SA_01
Description: The system should provide a System Admin with a GUI to import user profiles from external databases.		
Rationale: System Admin wants to import user profiles from external databases.		
Source: System Admin		
Fit Criterion: User profiles can be successfully imported.		
Dependencies: None		
Rank of importance: Optional		
Supporting Materials: None		
History:		
<ul style="list-style-type: none"> • Created by Do Nguyen 25/10/2004 		

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- Edited by Thu Nguyen 26/10/2004

Requirement #: F_3.1.1.1_02	Requirement Type: Functional	Use case #: SA_LB_54
Description: The system should provide a System Admin with a GUI to view requests to change profiles from Librarians and Borrowers.		
Rationale: System Admin wants to view requests to change profiles from Librarians and Borrowers.		
Source: System Admin		
Fit Criterion: The requests can be successfully viewed.		
Dependencies: The to-be-viewed request to change profile must exist. Refer to F_3.1.1.2_02.		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen 26/10/2004		

Requirement #: F_3.1.1.1_03	Requirement Type: Functional	Use case #: SA_LB_55
Description: The system should provide a System Admin a GUI to delete requests to change profiles from Librarians and Borrowers.		
Rationale: System Admin wants to delete requests to change profiles from Librarians and Borrowers.		
Source: System Admin		
Fit Criterion: The requests can be successfully deleted.		
Dependencies: The to-be-deleted request to change profile must exist. Refer to F_3.1.1.2_02.		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen 02/11/2004		

Requirement #: F_3.1.1.1_04	Requirement Type: Functional	Use case #: SA_02
Description: The system should provide a System Admin with a GUI to add a new non-administrator user (Librarian/Borrower) profile. A profile consists of First Name, Last Name, User Name, Password, Bar Code, and Department, Email, Addresses, Account Status, Role (required); Date of Birth, Telephone Numbers, Limited Borrowable Resource Number (not required). Bar Code can be manually inputted or scanned using Barcode reader.		
Rationale: System Admin wants to add a new non-administrator user profile.		
Source: System Admin		
Fit Criterion: A new non-administrator user profile can be successfully added.		
Dependencies: None		
Rank of importance: Critical		
Supporting Materials: None		
History: <ul style="list-style-type: none"> • Created by Do Nguyen on 25/10/2004 • Edited by Thu Nguyen on 26/10/2004 		

Requirement #: F_3.1.1.1_05	Requirement Type: Functional	Use case #: SA_03
Description: The system should provide a System Admin with a GUI to edit an existing non-administrator (Librarian/Borrower) user profile. A profile consists of First Name, Last Name, User Name (cannot be edited), Password, Bar Code, Department, Email, Addresses, Account Status, Role (required); Date of Birth, Telephone Numbers, Limited Borrowable Resource Number (not		

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required).
Bar Code can be manually inputted or scanned using Barcode reader.
Rationale: System Admin wants to edit an existing non-administrator user profile.
Source: System Admin
Fit Criterion: An existing non-administrator user profile can be successfully edited.
Dependencies: The to-be-edited profile must exist. Refer to F_3.1.1.1_04.
Rank of importance: Critical
Supporting Materials: None
History:
<ul style="list-style-type: none"> Created by Do Nguyen on 25/10/2004 Edited by Thu Nguyen on 26/10/2004

Requirement #: F_3.1.1.1_06	Requirement Type: Functional	Use case #: SA_04
Description: The system should provide a System Admin with a GUI to delete one or more existing non-administrator (Librarian/Borrower) user profile(s).		
Rationale: System Admin wants to delete existing non-administrator user profile(s).		
Source: System Admin		
Fit Criterion: Existing non-administrator user profile(s) can be successfully deleted.		
Dependencies: The to-be-deleted profile must exist. Refer to F_3.1.1.1_04.		
Rank of importance: Critical		
Supporting Materials: None		
History:		
<ul style="list-style-type: none"> Created by Do Nguyen on 25/10/2004 Edited by Thu Nguyen on 26/10/2004 		

Requirement #: F_3.1.1.1_07	Requirement Type: Functional	Use case #: SA_LB_05, SA_LB_06
Description: The system should provide a System Admin with a GUI to disable and enable one or more existing non-administrator (Librarian/Borrower) user account(s). When the user's account is disabled by System Admin, he can no longer log into E-Library system until his account is re-enabled by System Admin.		
Rationale: System Admin wants to disable and enable existing non-administrator user account(s).		
Source: System Admin		
Fit Criterion: Existing non-administrator user account(s) can be successfully disabled and enabled.		
Dependencies: The to-be-disabled/enabled account must exist. Refer to F_3.1.1.1_04.		
Rank of importance: Critical		
Supporting Materials: None		
History:		
<ul style="list-style-type: none"> Created by Do Nguyen on 25/10/2004 Edited by Thu Nguyen on 26/10/2004 		

Requirement #: F_3.1.1.1_08	Requirement Type: Functional	Use case #: NONE
Description: The system should be able to check for overdue borrowing records every morning (8:00) and automatically disable Borrower accounts that have overdue borrowing records. When the Borrower's account is automatically disabled by the system, he can log into E-Library system, can search and view resource profiles, can download e-resources but cannot borrow or reserve any In-library resource.		
Rationale: Librarian wants the system to automatically disable Borrower accounts.		

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Source: Librarian
Fit Criterion: Borrower accounts are successfully disabled.
Dependencies: The to-be-disabled/enabled account must exist. Refer to F_3.1.1.1_04.
Rank of importance: Critical
Supporting Materials: None
History: Created by Thu Nguyen on 02/11/2004

Requirement #: F_3.1.1.1_09	Requirement Type: Functional	Use case #: SA_08
Description: The system should provide a System Admin a GUI to edit his own profile. A profile consists of First Name, Last Name, User Name, Password (cannot be viewed), Bar Code, Department, Email, Addresses, Account Status, Role (required); Date of Birth, Telephone Numbers, Limited Borrowable Resource Number (not required). Bar Code can be manually inputted or scanned using Barcode reader.		
Rationale: System Admin wants to edit his own profile.		
Source: System Admin		
Fit Criterion: The profile can be successfully edited.		
Dependencies: The to-be-edited profile must exist. Refer to F_3.1.1.1_04.		
Rank of importance: Critical		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Do Nguyen 25/10/2004 Edited by Thu Nguyen 26/10/2004 		

Requirement #: F_3.1.1.1_10	Requirement Type: Functional	Use case #: SA_LB_11
Description: The system should provide a System Admin with a GUI to view any Borrower profile and any Librarian profile. A profile consists of First Name, Last Name, User Name, Password (cannot be viewed), Bar Code, Department, Email, Addresses, Account Status, Role (required); Date of Birth, Telephone Numbers, Limited Borrowable Resource Number (not required).		
Rationale: An administrator wants to view Borrower profiles and Librarian profiles.		
Source: System Admin		
Fit Criterion: The profile should be viewed successfully.		
Dependencies: The to-be-viewed profile must exist. Refer to F_3.1.1.1_04.		
Rank of importance: Critical		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thu Nguyen on 24/10/2004 Edited by Thu Nguyen on 26/10/2004 Edited by Thu Nguyen on 28/10/2004 		

Requirement #: F_3.1.1.1_11	Requirement Type: Functional	Use case #: SA_LB_13
Description: The system should allow a System Admin to filter users of any type by First Name, Last Name and Account Status. The purpose of filtering is to filter records of user profiles that are being currently displayed on the screen.		
Rationale: A System Admin wants to filter user profiles.		
Source: System Admin		
Fit Criterion: User profiles can be filtered successfully.		
Dependencies: None		
Rank of importance: Desirable		
Supporting Materials: None		

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History: Created by Thu Nguyen on 02/11/2004

Requirement #: F_3.1.1.1_12	Requirement Type: Functional	Use case #: SA_LB_12
Description: The system should provide a System Admin a GUI form to search for users of any type. Search criteria include: First Name, Last Name, Department, Email, Barcode, Role, Account Status and Key word.		
Rationale: A System Admin wants to search for user profiles.		
Source: System Admin		
Fit Criterion: A GUI search form for users should be displayed.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thu Nguyen on 26/10/2004 Edited by Thu Nguyen on 28/10/2004 		

Requirement #: F_3.1.1.1_13	Requirement Type: Functional	Use case #: SA_LB_14
Description: The system should allow System Admin to generate report of user profiles of any role by providing him with a GUI form to specify what kind of user information he wants to generate reports of. Information can be chosen for generating report includes: First Name, Last Name, Department, Email, Barcode, Role and Account Status. Report contents includes: First Name, Last Name, Department, Barcode, Role, Account Status, Addresses, Telephone Numbers and Email.		
Rationale: A System Admin wants to generate reports of user profiles.		
Source: System Admin		
Fit Criterion: Reports should be successfully generated.		
Dependencies: The to-be-generate-report profiles must exist. Refer to F_3.1.1.1_04.		
Rank of importance: Essential		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thu Nguyen on 26/10/2004 Edited by Thu Nguyen on 28/10/2004 		

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3.1.1.2 User Side

This section includes all functions that user (System admin, librarian and borrower) can use to interact with E-Library system

Requirement #: F_3.1.1.2_01	Requirement Type: Functional	Use case #: CM_07
Description: The system should provide a user of any type (System Admin/Librarian/Borrower) with a GUI to view only his own profile. A profile consists of First Name, Last Name, User Name, Password (cannot be viewed), Bar Code, Department, Email, Addresses, Account Status, Role (required); Date of Birth, Telephone Numbers, Limited Borrowable Resource Number (not required).		
Rationale: A user wants to view his profile.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: A user profile should be viewed successfully.		
Dependencies: The to-be-viewed profile must exist. Refer to F_3.1.1.1_04.		
Rank of importance: Critical		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thu Nguyen on 24/10/2004 Edited by Thu Nguyen on 26/10/2004 Edited by Thu Nguyen on 28/10/2004 		

Requirement #: F_3.1.1.2_02	Requirement Type: Functional	Use case #: LB_BR_09
Description: The system should provide a non-administrator user (Librarian/Borrower) with a GUI form to request System Admin to modify his own profile. This form should contain the information the user wants to change. A profile consists of First Name, Last Name, User Name (cannot be changed), Password, Bar Code, Department, Email, Addresses, Account Status, Role (required); Date of Birth, Telephone Numbers, Limited Borrowable Resource Number (not required).		
Rationale: A Librarian/Borrower wants to change his own profile.		
Source: Librarian, Borrower		
Fit Criterion: The system should display a form for a Librarian/Borrower to fill in the information he wants to modify in his own profile and the form submission is successful.		
Dependencies: The to-be-edited profile must exist. Refer to F_3.1.1.1_04.		
Rank of importance: Essential		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thu Nguyen on 24/10/2004 Edited by Thu Nguyen on 26/10/2004 		

Requirement #: F_3.1.1.2_03	Requirement Type: Functional	Use case #: CM_10
Description: The system should provide a user of any type (System Admin/Librarian/Borrower) with a GUI form to change his own password.		
Rationale: A user wants to change his password.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: A user can successfully change his own password.		
Dependencies: The to-be-change-password profile must exist. Refer to F_3.1.1.1_04.		
Rank of importance: Critical		
Supporting Materials: None		

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History:

- Created by Thu Nguyen on 24/10/2004
- Edited by Thu Nguyen on 26/10/2004

Requirement #: F_3.1.1.2_04	Requirement Type: Functional	Use case #: SA_LB_11
Description: The system should provide a Librarian with a GUI to view any Borrower profile. A profile consists of First Name, Last Name, User Name, Password (cannot be viewed), Bar Code, Department, Email, Addresses, Account Status, Role (required); Date of Birth, Telephone Numbers, Limited Borrowable Resource Number (not required).		
Rationale: A Librarian wants to view Borrower profiles.		
Source: Librarian		
Fit Criterion: A Borrower profile should be viewed successfully.		
Dependencies: The to-be-viewed profile must exist. Refer to F_3.1.1.1_04.		
Rank of importance: Critical		
Supporting Materials: None		
History: <ul style="list-style-type: none"> • Created by Thu Nguyen on 24/10/2004 • Edited by Thu Nguyen on 26/10/2004 • Edited by Thu Nguyen on 28/10/2004 		

Requirement #: F_3.1.1.1_05	Requirement Type: Functional	Use case #: SA_LB_05; SA_LB_06
Description: The system should provide a Librarian with a GUI to disable/enable one or more Borrower account. Librarian can disable a Borrower account in the following cases: <ul style="list-style-type: none"> • The Borrower has overdue borrowing record(s) • The Borrower steals, loses or damage any in-library resource(s) When the Borrower's account is disabled by Librarian, he can log into E-Library system, can search and view resource profiles, can download e-resources but cannot borrow or reserve any In-library resource.		
Rationale: Librarian wants to disable/enable Borrower accounts.		
Source: Librarian		
Fit Criterion: Borrower accounts are successfully disabled.		
Dependencies: The to-be-disabled/enabled account must exist. Refer to F_3.1.1.1_04.		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 02/11/2004		

Requirement #: F_3.1.1.2_06	Requirement Type: Functional	Use case #: SA_LB_13
Description: The system should allow a Librarian to filter Borrower profiles by First Name, Last Name and Account Status. The purpose of filtering is to filter records of Borrower profiles that are being currently displayed on the screen.		
Rationale: A Librarian wants to filter Borrower Profiles.		
Source: Librarian		
Fit Criterion: Borrower profiles can be filtered successfully.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen on 02/11/2004		

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Requirement #: F_3.1.1.2_07	Requirement Type: Functional	Use case #: SA_LB_12
Description: The system should provide a Librarian a GUI form to search for Borrower profiles. Search criteria include: First Name, Last Name, Department, Email, Barcode, Role, Account Status and Key word.		
Rationale: A Librarian wants to search for Borrower profiles.		
Source: Librarian		
Fit Criterion: A GUI search form for Borrower profiles should be displayed.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen on 02/11/2004		

Requirement #: F_3.1.1.2_08	Requirement Type: Functional	Use case #: SA_LB_14
Description: The system should allow Librarian to generate report of Borrower profiles by providing him with a GUI form to specify what kind of Borrower information he wants to generate reports of. Information can be chosen for generating report includes: First Name, Last Name, Department, Email, Barcode, Role and Account Status. Report contents includes: First Name, Last Name, Department, Barcode, Role, Account Status, Addresses, Telephone Numbers and Email		
Rationale: A Librarian wants to generate reports of Borrower profiles.		
Source: Librarian		
Fit Criterion: Reports should be successfully generated.		
Dependencies: The to-be-generate-report profiles must exist. Refer to F_3.1.1.1_04.		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen on 02/11/2004		

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3.1.2 Resources Management Subsystem

This section captures functionalities that E-Library system provides to Librarian to manage categories and resource profiles, including importing, adding, editing, deleting searching and generating reports of resource profiles.

3.1.2.1 Categories Management

This section includes all functions that allow library to create new (add), view and modifies category information.

Requirement #: F_3.1.2.1_01	Requirement Type: Functional	Use case #: LB_15
Description: The system should provide Librarian with a GUI to add a new category of resource. A category profile consists of Name, Description.		
Rationale: Librarian wants to add new categories of resources.		
Source: Librarian		
Fit Criterion: A new category can be successfully added.		
Dependencies: None		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 26/10/2004		

Requirement #: F_3.1.2.1_02	Requirement Type: Functional	Use case #: LB_17
Description: The system should provide Librarian with a GUI to edit an existing category of resource. A category profile consists of Name, Description.		
Rationale: Librarian wants to edit categories of resources.		
Source: Librarian		
Fit Criterion: An existing category can be successfully edited.		
Dependencies: The to-be-edited category must exist. Refer to F_3.1.2.1_01.		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 26/10/2004		

Requirement #: F_3.1.2.1_03	Requirement Type: Functional	Use case #: LB_16
Description: The system should provide Librarian with a GUI to view an existing category of resource. A category profile consists of Name, Description.		
Rationale: Librarian wants to view categories of resources.		
Source: Librarian		
Fit Criterion: An existing category can be successfully viewed.		
Dependencies: The to-be-viewed category must exist. Refer to F_3.1.2.1_01.		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 26/10/2004		

Requirement #: F_3.1.2.1_04	Requirement Type: Functional	Use case #: LB_64
Description: The system should provide Librarian with a GUI to delete an existing category of resource that has no associated resource profiles.		
Rationale: Librarian wants to delete categories of resources.		
Source: Librarian		

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Fit Criterion: An existing category can be successfully deleted.
Dependencies: The to-be-deleted category must exist. Refer to F_3.1.2.1_01.
Rank of importance: Critical
Supporting Materials: Mr. Hoa's idea
History: Created by Thu Nguyen on 17/11/2004

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3.1.2.2 Resource Profiles Management

This section includes all functions that allow librarian to manage resource profile such as adding, viewing, importing, reporting and deleting.

Requirement #: F_3.1.2.2_01	Requirement Type: Functional	Use case #: LB_18, LB_19, LB_20
Description: The system should provide a librarian with a GUI to add a resource profile. <ul style="list-style-type: none"> A book profile consists of: title, author, ISBN, publisher, category, bar codes, status (refer to section 1.3), allowed borrowing period of time (required); published date, edition, price, description, attachments (not required) A facility resource profile consists of: title, manufacturer, category, bar codes, status (refer to section 1.3), allowed borrowing period of time (required); manufactured date, price, description (not required) An e-resource profile consists of: title, link to the resource (required); description, attachments (not required) Bar Code can be manually inputted or scanned using Barcode reader.		
Rationale: A Librarian wants to add a new resource profile.		
Source: Librarian		
Fit Criterion: A new resource profile should be added successfully.		
Dependencies: The to-be-added resource profile must belong to an existing category. Refer to F_3.1.2.1_01.		
Rank of importance: Critical (for Books) and Essential (for other resources)		
Supporting Materials: Catalogue.xls (From Ms. Anne)		
History: <ul style="list-style-type: none"> Created by Thanh Nguyen 24/10/2004 Edited by Thu Nguyen 26/10/2004 Edited by Thu Nguyen 28/10/2004 		

Requirement #: F_3.1.2.2_02	Requirement Type: Functional	Use case #: LB_24, LB_25, LB_26
Description: The system should provide a librarian with a GUI to edit a resource profile. <ul style="list-style-type: none"> A book profile consists of: title, author, ISBN, publisher, category, bar codes, status (refer to section 1.3), allowed borrowing period of time (required); published date, edition, price, description, attachments (not required) A facility resource profile consists of: title, manufacturer, category, bar codes, status (refer to section 1.3), allowed borrowing period of time (required); manufactured date, price, description (not required) An e-resource profile consists of: title, link to the resource (required); description, attachments (not required) Bar Code can be manually inputted or scanned using Barcode reader.		
Rationale: A Librarian wants to edit an existing resource profile.		
Source: Librarian		
Fit Criterion: A book profile should be edited successfully.		
Dependencies: <ul style="list-style-type: none"> The to-be-edited resource profile must exist. Refer to F_3.2.2.1_01 The to-be-edited resource profile must belong to an existing category. Refer to F_3.1.2.1_01 		
Rank of importance: Critical (for Books) and Essential (for other resources)		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thanh Nguyen 24/10/2004 Edited by Thu Nguyen 26/10/2004 		

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Requirement #: F_3.1.2.2_03	Requirement Type: Functional	Use case #: LB_21, LB_22, LB_23
Description: The system should provide a Librarian/Borrower with a GUI to view a resource profile. <ul style="list-style-type: none"> A book profile consists of: title, author, ISBN, publisher, category, bar codes, status (refer to section 1.3), allowed borrowing period of time (required); published date, edition, price, description, attachments (not required) A facility resource profile consists of: title, manufacturer, category, bar codes, status (refer to section 1.3), allowed borrowing period of time (required); manufactured date, price, description (not required) An e-resource profile consists of: title, link to the resource (required); description, attachments (not required) 		
Rationale: A Librarian/Borrower wants to view a resource profile.		
Source: Librarian, Borrower		
Fit Criterion: A resource profile should be viewed successfully.		
Dependencies: The to-be-view resource profile must exist. Refer to F_3.2.2.1_01.		
Rank of importance: Critical (for Books) and Essential (for other resources)		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thanh Nguyen 24/10/2004 Edited by Thu Nguyen 26/10/2004 		

Requirement #: F_3.1.2.2_04	Requirement Type: Functional	Use case #: LB_BR_27
Description: The system should provide Librarian and Borrower with a GUI to search for resource profiles. Search criteria include: Title, Author, ISBN, Publisher, Resource Type, Barcode, Category, Status and Key word.		
Rationale: Librarian and Borrower want to search for resource profiles.		
Source: Librarian, Borrower		
Fit Criterion: A resource profile search form should be displayed.		
Dependencies: None		
Rank of importance: Critical (for Books) and Essential (for other resources)		
Supporting Materials: None		
History: Created by Thu Nguyen 03/11/2004		

Requirement #: F_3.1.2.2_05	Requirement Type: Functional	Use case #: LB_BR_28
Description: The system should allow Librarian and Borrower to filter resource profiles by Title, Category and Quantity. The purpose of filtering is to filter records of resource profiles that are currently being displayed on the screen.		
Rationale: Librarian and Borrower want to filter resource profiles.		
Source: Librarian, Borrower		
Fit Criterion: Resource profiles can be filtered correctly.		
Dependencies: None		
Rank of importance: Critical (for Books) and Essential (for other resources)		
Supporting Materials: None		
History: Created by Thu Nguyen 03/11/2004		

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Requirement #: F_3.1.2.2_06	Requirement Type: Functional	Use case #: LB_BR_29
Description: The system should allow Librarian and Borrower to generate report of resource profiles by providing them with a GUI to specify what kind of information they want to generate report of. Information can be chosen for generating report includes: Title, Author, Publisher, Category, Barcode, Quantity and Status. Report content includes: Title, Author, ISBN, Publisher, Publish date, Edition, Category, Price, Time to Borrow, Barcode list and Attachments list.		
Rationale: Librarian and Borrower want to generate report of resource profiles.		
Source: Librarian, Borrower		
Fit Criterion: Report can be generated successfully.		
Dependencies: The to-be-generate-report must exist. Refer to F_3.1.2.2_01		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen 03/11/2004		

Requirement #: F_3.1.2.2_07	Requirement Type: Functional	Use case #: LB_65
Description: The system should provide a librarian with a GUI to import resource profiles from external databases.		
Rationale: A Librarian wants to import resource profiles from external databases.		
Source: Librarian		
Fit Criterion: Resource profiles should be imported successfully.		
Dependencies: None		
Rank of importance: Desirable		
Supporting Materials: Mr. Hoa's idea		
History: Created by Thu Nguyen 22/11/2004		

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3.1.3 Library Activities Management Subsystem

This section captures functionalities that E-Library system provides to Librarian and Borrower to manage library activities, including borrowing and reserving resources.

3.1.3.1 Accessing Resources Online

This section includes all functions that allow user and librarian interacts with online resource.

Requirement #: F_3.1.3.1_01	Requirement Type: Functional	Use case #: BR_30
Description: The system should provide a Borrower a GUI to browse all resources that the library currently has by categories.		
Rationale: A Borrower wants to browse all resources that the library currently has by categories.		
Source: Borrower		
Fit Criterion: A GUI to browse all resources by categories should be displayed.		
Dependencies: Categories must exist. Refer to F_3.1.2.1_01.		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 24/10/2004		

Requirement #: F_3.1.3.1_02	Requirement Type: Functional	Use case #: BR_31
Description: The system should allow a Borrower to read an online e-resource.		
Rationale: A Borrower wants to read an online e-resource.		
Source: Borrower		
Fit Criterion: An Online e-resource's content should be displayed.		
Dependencies: The to-be-read online e-resource must exist. Refer to F_3.1.2.2_01.		
Rank of importance: Desirable		
Supporting Materials: None		
History: Created by Thu Nguyen on 24/10/2004		

Requirement #: F_3.1.3.1_03	Requirement Type: Functional	Use case #: BR_31
Description: The system should provide a Borrower with a GUI to download an offline e-resource to his local machine.		
Rationale: A Borrower wants to download an offline e-resource.		
Source: Borrower		
Fit Criterion: An offline e-resource should be successfully downloaded to Borrower's local machine.		
Dependencies: The to-be-downloaded offline e-resource must exist. Refer to F_3.1.2.2_01.		
Rank of importance: Desirable		
Supporting Materials: None		
History: Created by Thu Nguyen on 24/10/2004		

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3.1.3.2 Borrowing and Renewing Processes Management

This section includes all functions which are related to processes of borrowing and renewing resource.

Requirement #: F_3.1.3.2_01	Requirement Type: Functional	Use case #: LB_32
Description: The system should provide a Librarian with a GUI to record a new borrowing record. A borrowing record consists of: Borrower Bar Code or User Name (one of them only), Bar Code Of The Resource, Borrowing Date, Due Date, Actual Returning Date, Status of Resource When Being Returned. Bar Code can be manually inputted or scanned using Barcode reader.		
Rationale: Librarian wants to control borrowing process.		
Source: Librarian		
Fit Criterion: A new borrowing record can be successfully recorded.		
Dependencies: The Borrower and the to-be-borrowed resource must exist. Refer to F_3.1.1.1_04 and F_3.1.2.2_01.		
Rank of importance: Critical		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thu Nguyen on 26/10/2004 Edited by Thu Nguyen on 28/10/2004 		

Requirement #: F_3.1.3.2_02	Requirement Type: Functional	Use case #: LB_34, LB_38
Description: The system should provide a Librarian with a GUI to edit an existing borrowing record, including renewing a borrowing record. A borrowing record consists of: Borrower Bar Code or User Name (one of them only), Bar Code Of The Resource, Borrowing Date, Due Date, Actual Returning Date, Status of Resource When Being Returned. Bar Code can be manually inputted or scanned using Barcode reader.		
Rationale: Librarian wants to control borrowing process.		
Source: Librarian		
Fit Criterion: An existing borrowing record can be successfully edited.		
Dependencies: <ul style="list-style-type: none"> The to-be-edited borrowing record must exist. Refer to F_3.1.3.2_01 The Borrower and the to-be-borrowed resource must exist. Refer to F_3.1.1.1_04 and F_3.1.2.2_01 		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 26/10/2004		

Requirement #: F_3.1.3.2_03	Requirement Type: Functional	Use case #: LB_33
Description: The system should provide a Librarian with a GUI to view an existing borrowing record, including renewing a borrowing record. A borrowing record consists of: Borrower Bar Code or User Name (one of them only), Bar Code Of The Resource, Borrowing Date, Due Date, Actual Returning Date, Status of Resource When Being Returned. Bar Code can be manually inputted or scanned using Barcode reader.		
Rationale: Librarian wants to control borrowing process.		
Source: Librarian		
Fit Criterion: An existing borrowing record can be successfully edited.		
Dependencies: The to-be-viewed borrowing record must exist. Refer to F_3.1.3.2_01		
Rank of importance: Critical		

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Supporting Materials: None
History: Created by Thu Nguyen on 26/10/2004

Requirement #: F_3.1.3.2_04	Requirement Type: Functional	Use case #: LB_35
Description: The system should provide a Librarian with a GUI to delete unused existing borrowing records of a specific period of time (e.g. borrowing records of the last month).		
Rationale: Librarian wants to control borrowing process.		
Source: Librarian		
Fit Criterion: Unused borrowing records can be successfully.		
Dependencies: The to-be-deleted borrowing record must exist. Refer to F_3.1.3.2_01		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 26/10/2004		

Requirement #: F_3.1.3.2_05	Requirement Type: Functional	Use case #: LB_36
Description: The system should provide a Librarian with a GUI form to search for borrowing records. Search criteria includes: Borrower Name, Borrower ID, Borrowing Date, Resource Title, Resource Barcode and Due Date.		
Rationale: Librarian wants to search for borrowing records.		
Source: Librarian		
Fit Criterion: A search form for borrowing records should be displayed.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen on 03/11/2004		

Requirement #: F_3.1.3.2_06	Requirement Type: Functional	Use case #: LB_37
Description: The system should provide librarian with a GUI to generate report of borrowing records. There are three kinds of borrowing report: 1. Customized Report - Criteria: Borrower ID, Borrower Barcode, Resource Barcode, Date of Borrowing, Due Date, Date of Returning, Status When Returning - Content: Borrower Name, Borrower ID, Resource Title, Resource Barcode, Date of Borrowing, Due Date, Date of Returning, Status When Returning 2. Overdue Report - Criteria: Due Date, Over Due Period - Content: Borrower Name, Borrower ID, Resource Title, Resource Barcode, Date of Borrowing, Due Date, Date of Returning, Over Due Period 3. Most-borrowed Report - Criteria: Start Date, End Date - Content: Borrower ID, Borrower Name, Resource Title, Resource Barcode, Date of Borrowing		
Rationale: Librarian wants to generate report of borrowing records.		
Source: Librarian		
Fit Criterion: Report is generated successfully.		
Dependencies: The to-be-generate-report borrowing records must exist. Refer to F_3.1.3.2_01.		
Rank of importance: Essential		
Supporting Materials: Mr. Anne's idea		
History: Created by Thu Nguyen on 03/11/2004		

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Requirement #: F_3.1.3.2_07	Requirement Type: Functional	Use case #: NONE
Description: The system should automatically generate the list of overdue borrowing records on the first time librarian logs into the system of a day. The list content: Borrower Name, Borrower ID, Resource Title, Resource Barcode, Date of Borrowing, Due Date, Date of Returning, Over Due Period.		
Rationale: Librarian wants to have the list of overdue borrowing records.		
Source: Librarian		
Fit Criterion: A list of overdue borrowing records should be generated on the first time librarian logs into the system of a day.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thanh Nguyen 24/10/2004 Edited by Thu Nguyen 26/10/2004 		

Requirement #: F_3.1.3.2_08	Requirement Type: Functional	Use case #: LB_66, LB_67
Description: The system should provide a Librarian with a GUI to archive and retrieve old borrowing records.		
Rationale: Librarian wants to archive and retrieve old borrowing records.		
Source: Librarian		
Fit Criterion: Old borrowing records can be archived and retrieved successfully.		
Dependencies: The to-be-archived/retrieved borrowing record must exist. Refer to F_3.1.3.2_01.		
Rank of importance: Optional		
Supporting Materials: Mr. Hoa's idea		
History: Created by Thu Nguyen 22/11/2004		

Requirement #: F_3.1.3.2_09	Requirement Type: Functional	Use case #: BR_40
Description: The system should provide a Borrower with a GUI form to submit his request of borrowing available resource(s).		
Rationale: A Borrower wants to borrow available resource(s).		
Source: Borrower		
Fit Criterion: A Borrower can successfully submit a borrowing form.		
Dependencies: None		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 24/10/2004		

Requirement #: F_3.1.3.2_10	Requirement Type: Functional	Use case #: BR_42
Description: The system should provide a Borrower with a GUI form to renew resource(s) that he is currently borrowing and that are not reserved by any other Borrowers.		
Rationale: A Borrower wants to renew resource(s).		
Source: Borrower		
Fit Criterion: A Borrower can successfully submit a renewing form.		
Dependencies: The to-be-renewed borrowing record must exist. Refer to F_3.1.3.2_01.		
Rank of importance: Critical		
Supporting Materials: None		

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History: Created by Thu Nguyen on 03/11/2004

Requirement #: F_3.1.3.2_11	Requirement Type: Functional	Use case #: BR_41
Description: The system should provide a Borrower with a GUI to view all resource(s) that he is currently borrowing.		
Rationale: A Borrower wants to keep track of the resource(s) he is currently borrowing.		
Source: Borrower		
Fit Criterion: The list of resources a Borrower is currently borrowing should be displayed.		
Dependencies: The to-be-viewed borrowed resources must exist. Refer to F_3.1.3.2_01.		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 03/11/2004		

Requirement #: F_3.1.3.2_12	Requirement Type: Functional	Use case #: BR_44
Description: The system should notify a Borrower about his expiry time for coming to Librarian to take the resource he borrows when <ul style="list-style-type: none"> • He has finished the online borrowing process • The expiry time is up Expiry time is the time allocated to a Borrower within which he must come to see a Librarian to collect the resource he borrows.		
Rationale: A Borrower wants to borrow a resource.		
Source: Borrower		
Fit Criterion: Notification should be <ul style="list-style-type: none"> • Displayed on the screen when he has finished the online borrowing process • Sent to Borrower's email address when the expiry time is up 		
Dependencies: None		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 24/10/2004		

Requirement #: F_3.1.3.2_13	Requirement Type: Functional	Use case #: BR_43
Description: The system should automatically send notification messages to Borrower email addresses <ul style="list-style-type: none"> • One day before the due date • One day after the due date (only for Borrowers who forget to return resources on time) 		
Rationale: Borrower wants to be notified about the due date of returning resources.		
Source: Borrower		
Fit Criterion: Notification messages are sent to Borrower email addresses <ul style="list-style-type: none"> • One day before the due date • One day after the due date (only for Borrowers who forget to return resources on time) 		
Dependencies: The Borrower is currently borrowing some resource(s). Refer to F_3.1.3.2_08.		
Rank of importance: Critical		
Supporting Materials: None		
History: <ul style="list-style-type: none"> • Created by Thanh Nguyen 24/10/2004 • Edited by Thu Nguyen 26/10/2004 		

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Requirement #: F_3.1.3.2_14	Requirement Type: Functional	Use case #: LB_32
Description: The system should provide a Librarian with a GUI to print a receipt of all resources that a Borrower borrows at a time. The receipt contains: Borrower Name, Borrower ID, Borrower Barcode, Resource Title, Resource Barcode, Date of Borrowing, and Due Date.		
Rationale: Borrower wants to keep track of all resources he borrows.		
Source: Borrower		
Fit Criterion: A receipt is printed successfully.		
Dependencies: The to-be-printed borrowing record must exist. Refer to F_3.1.3.2_01.		
Rank of importance: Essential		
Supporting Materials: Mr. Hoa's idea		
History: Created by Thu Nguyen 30/11/2004		

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3.1.3.3 Reservation Process Management

This section includes all functions relate to process of management reservation resource.

Requirement #: F_3.1.3.3_01	Requirement Type: Functional	Use case #: LB_69
Description: The system should provide a Librarian with a GUI to add a new reservation record. A reservation record consists of: Borrower Bar Code or User Name (one of them only), Bar Code of The Resource, Reservation Date And Time, Date and Time When Reservation Is Expired (automatically generated). Bar Code can be manually inputted or scanned using Barcode reader.		
Rationale: Librarian wants to control reservation process.		
Source: Librarian		
Fit Criterion: A new reservation record can be successfully added.		
Dependencies: None		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 26/10/2004		

Requirement #: F_3.1.3.3_02	Requirement Type: Functional	Use case #: LB_70
Description: The system should provide a Librarian with a GUI to edit an existing reservation record. A reservation record consists of: Borrower Bar Code or User Name (one of them only), Bar Code of The Resource, Reservation Date And Time, Date and Time When Reservation Is Expired (automatically generated). Bar Code can be manually inputted or scanned using Barcode reader.		
Rationale: Librarian wants to control reservation process.		
Source: Librarian		
Fit Criterion: An existing reservation record can be successfully edited.		
Dependencies: The to-be-edited reservation record must exist. Refer to F_3.1.3.3_01.		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 26/10/2004		

Requirement #: F_3.1.3.3_03	Requirement Type: Functional	Use case #: LB_45
Description: The system should provide Librarian with a GUI to approve a reservation records to a borrowing records.		
Rationale: Librarian does not want to re-specify details of borrowing record. Instead, she can use details of the approved reservation record.		
Source: Librarian		
Fit Criterion: A reservation record is successfully approved to a borrowing record.		
Dependencies: The to-be-approved reservation record must exist. Refer to F_3.1.3.3_01.		
Rank of importance: Critical		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thanh Nguyen 24/10/2004 Edited by Thu Nguyen 26/10/2004 		

Requirement #: F_3.1.3.3_04	Requirement Type: Functional	Use case #: LB_46
Description: The system should provide a Librarian with a GUI to view an existing reservation		

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record. A reservation record consists of: Borrower Bar Code or User Name (one of them only), Bar Code of The Resource, Reservation Date And Time, Date and Time When Reservation Is Expired (automatically generated).

Bar Code can be manually inputted or scanned using Barcode reader.

Rationale: Librarian wants to control reservation process.

Source: Librarian

Fit Criterion: An existing reservation record can be successfully viewed.

Dependencies: The to-be-viewed reservation record must exist. Refer to F_3.1.3.3_01.

Rank of importance: Critical

Supporting Materials: None

History: Created by Thu Nguyen on 26/10/2004

Requirement #: F_3.1.3.3_05	Requirement Type: Functional	Use case #: LB_47
Description: The system should provide a Librarian with a GUI to delete unused existing reservation records of a specific period of time (e.g. reservation records of the last month).		
Rationale: Librarian wants to control reservation process.		
Source: Librarian		
Fit Criterion: Unused reservation records can be successfully.		
Dependencies: The to-be-deleted reservation record must exist. Refer to F_3.1.3.3_01.		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 26/10/2004		

Requirement #: F_3.1.3.3_06	Requirement Type: Functional	Use case #: LB_48
Description: The system should provide a Librarian with a GUI to search for reservation records. Search criteria include: Borrower Name, Borrower Barcode, Reservation Date, Available Date, Expiry Date, Resource Title, Resource Barcode, Resource Type, Key word.		
Rationale: Librarian wants to search for reservation records.		
Source: Librarian		
Fit Criterion: A search form for reservation records should be displayed.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen on 03/11/2004		

Requirement #: F_3.1.3.3_07	Requirement Type: Functional	Use case #: LB_49
Description: The system should provide a Librarian with a GUI to generate report of reservation records. There are two kinds of report:		
1. Customized Report		
- Criteria: Reserver ID, Reserver Barcode, Resource Barcode, Date of Reservation, Time or Reservation, Time of Expiration, Reservation Status		
- Content: Reserver Name, Reserver ID, Resource Title, Resource Barcode, Date of Reservation, Time or Reservation, Time of Expiration, Reservation Status		
2. Most Reserved Report		
- Criteria: Start Date, End Date		
- Content: Reserver Name, Reserver ID, Resource Title, Resource Barcode, Date of Reservation		
Rationale: Librarian wants to generate report of reservation records.		
Source: Librarian		
Fit Criterion: Report is generated successfully.		

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Dependencies: The to-be-generate-report reservation records must exist. Refer to F_3.1.3.3_01.
Rank of importance: Essential
Supporting Materials: None
History: Created by Thu Nguyen on 03/11/2004

Requirement #: F_3.1.3.3_08	Requirement Type: Functional	Use case #: BR_50
Description: The system should provide a Borrower with a GUI form to reserve unavailable resource(s).		
Rationale: A Borrower wants to reserve unavailable resource(s).		
Source: Borrower		
Fit Criterion: A Borrower can successfully submit a reservation form.		
Dependencies: None		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 03/11/2004		

Requirement #: F_3.1.3.3_09	Requirement Type: Functional	Use case #: BR_51
Description: The system should provide a Borrower with a GUI to view all resource(s) that he is currently reserving.		
Rationale: A Borrower wants to keep track of the resource(s) he is currently reserving.		
Source: Borrower		
Fit Criterion: The list of resources a Borrower is currently reserving should be displayed.		
Dependencies: The Borrower is currently reserving some resource(s). Refer to F_3.1.3.3_08.		
Rank of importance: Critical		
Supporting Materials: Mr. Hoa's idea		
History: Created by Thu Nguyen on 03/11/2004		

Requirement #: F_3.1.3.3_10	Requirement Type: Functional	Use case #: BR_52
Description: The system should notify the first Borrower in the reservation queue when the resource he reserved becomes available.		
Rationale: A Borrower wants to be notified about his reserved resource's status.		
Source: Borrower		
Fit Criterion: Notification should be sent to Borrower's email address when his reserved resource's status becomes available.		
Dependencies: The Borrower is currently reserving some resource(s). Refer to F_3.1.3.3_08.		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen on 24/10/2004		

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3.1.3.4 Users Communications

This section captures functionalities that E-Library system provides to System Admin, Librarian and Borrower to manage communicate with each other, including sending and receiving requests and feedbacks, creating, publishing, viewing and deleting announcements.

Requirement #: F_3.1.3.4_01	Requirement Type: Functional	Use case #: BR_53
Description: The system should provide a Borrower a GUI form to compose and send his feedback to System Admin and Librarian. There are two kinds of feedbacks: on system services (sent to System Admin) and on library services (sent to Librarian).		
Rationale: A Borrower wants to send comments to System Admin and Librarian.		
Source: Borrower		
Fit Criterion: A Borrower's feedback is successfully sent to System Admin /Librarian.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen on 24/10/2004		

Requirement #: F_3.1.3.4_02	Requirement Type: Functional	Use case #: BR_53
Description: The system should provide a Borrower a GUI form to request/suggest a new resource for the library. The new resource may be a resource the Borrower would like the library to buy or a resource he wants to upload to the library.		
Rationale: A Borrower wants to request and to upload a resource that the library does not have.		
Source: Librarian, Borrower		
Fit Criterion: A Borrower's request is successfully sent to librarian.		
Dependencies: None		
Rank of importance: Desirable		
Supporting Materials: None		
History: Created by Thu Nguyen on 24/10/2004		

Requirement #: F_3.1.3.4_03	Requirement Type: Functional	Use case #: BR_53
Description: The system should provide a Borrower a GUI form to order a resource he wants to buy from the library.		
Rationale: A Borrower wants to buy a resource from the library.		
Source: Librarian, Borrower		
Fit Criterion: A Borrower's order is successfully sent to Librarian.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen on 17/11/2004		

Requirement #: F_3.1.3.4_04	Requirement Type: Functional	Use case #: SA_LB_71
Description: The system should provide a Librarian and System admin a GUI form to reply to request or feedback from borrower.		
Rationale: A Librarian wants to answer questions or request in the request and feedback.		
Source: Librarian, Borrower		
Fit Criterion: a reply is successfully sent to Borrower.		

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Dependencies: There exist some requests or feedback from borrower. Refer to F_3.1.3.4_03 and F_3.1.3.4_03
Rank of importance: Essential
Supporting Materials: None
History: Created by Thu Nguyen on 17/11/2004

Requirement #: F_3.1.3.4_05	Requirement Type: Functional	Use case #: SA_LB_54
Description: The system should provide System Admin and Librarian with a GUI to view feedbacks and requests sent from Borrowers.		
Rationale: System Admin and Librarian want to be kept update with Borrowers' feedbacks and requests.		
Source: System Admin, Librarian		
Fit Criterion: Feedbacks and requests of Borrowers can be viewed successfully by System Admin and Librarian.		
Dependencies: The to-be-viewed request must exist. Refer to F_3.1.3.4_01, F_3.1.3.4_02, F_3.1.3.4_03.		
Rank of importance: Essential		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thanh Nguyen 24/10/2004 Edited by Thu Nguyen 26/10/2004 		

Requirement #: F_3.1.3.4_06	Requirement Type: Functional	Use case #: SA_LB_55
Description: The system should provide System Admin and Librarian with a GUI to delete feedbacks and requests sent from Borrowers.		
Rationale: System Admin and Librarian want to be kept update with Borrowers' feedbacks and requests.		
Source: System Admin, Librarian		
Fit Criterion: Feedbacks and requests of Borrowers can be deleted successfully by System Admin and Librarian.		
Dependencies: The to-be-deleted request must exist. Refer to F_3.1.3.4_01, F_3.1.3.4_02, F_3.1.3.4_03.		
Rank of importance: Essential		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Thanh Nguyen 24/10/2004 Edited by Thu Nguyen 26/10/2004 		

Requirement #: F_3.1.3.4_07	Requirement Type: Functional	Use case #: SA_LB_56
Description: The system should provide System Admin and Librarian with a GUI to create announcement and publish to all other users.		
Rationale: System Admin and Librarian want to create and publish announcements to all users.		
Source: System Admin, Librarian		
Fit Criterion: The announcement is created successfully and viewable by every user of the system.		
Dependencies: None		
Rank of importance: Desirable		
Supporting Materials: None		
History:		

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- Created by Do Nguyen 25/10/2004
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Requirement #: F_3.1.3.4_08	Requirement Type: Functional	Use case #: SA_LB_58
Description: The system should provide System Admin and Librarian with a GUI to delete announcements he created.		
Rationale: System Admin and Librarian want to delete his announcements.		
Source: System Admin, Librarian		
Fit Criterion: The announcements are deleted successfully from the whole system.		
Dependencies: The to-be-deleted announcement must exist. Refer to F_3.1.3.4_07.		
Rank of importance: Desirable		
Supporting Materials: None		
History: <ul style="list-style-type: none"> • Created by Do Nguyen 25/10/2004 • Edited by Thu Nguyen 26/10/2004 		

Requirement #: F_3.1.3.4_09	Requirement Type: Functional	Use case #: CM_57
Description: The system should provide all users with a GUI to view announcements published by System Admin and Librarian.		
Rationale: Users want to keep up with announcements.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: All users can view announcements.		
Dependencies: The to-be-viewed announcement must exist. Refer to F_3.1.3.4_07.		
Rank of importance: Desirable		
Supporting Materials: None		
History: <ul style="list-style-type: none"> • Created by Do Nguyen 25/10/2004 • Edited by Thu Nguyen 26/10/2004 		

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3.1.4 System Configuration Management Subsystem

This section captures functionalities that E-Library system provides to System Admin to manage system configuration settings, including importing and changing language and theme, managing error logs.

Requirement #: F_3.1.4_01	Requirement Type: Functional	Use case #: SA_59
Description: The system should provide a System Admin a GUI to view system error logs.		
Rationale: System Admin wants to keep track of system errors.		
Source: System Admin		
Fit Criterion: System errors are displayed to System Admin.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Do Nguyen 25/10/2004 Edited by Thu Nguyen 26/10/2004 		

Requirement #: F_3.1.4_02	Requirement Type: Functional	Use case #: SA_60
Description: The system should provide a System Admin a GUI to import a language configuration file to the system.		
Rationale: System Admin wants to import a language configuration file to the system.		
Source: System Admin		
Fit Criterion: The language configuration file is imported successfully to the system.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Do Nguyen 25/10/2004 Edited by Thu Nguyen 26/10/2004 		

Requirement #: F_3.1.4_03	Requirement Type: Functional	Use case #: SA_61
Description: The system should provide a System Admin a GUI to import a theme configuration file to the system.		
Rationale: System Admin wants to import a theme configuration file to the system.		
Source: System Admin		
Fit Criterion: The theme configuration file is imported successfully to the system.		
Dependencies: None		
Rank of importance: Optional		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Do Nguyen 25/10/2004 Edited by Thu Nguyen 26/10/2004 		

Requirement #: F_3.1.4_04	Requirement Type: Functional	Use case #: SA_62
Description: The system should provide a System Admin a GUI to change current default displaying language of the system.		
Rationale: System Admin wants to change current displaying language of the system.		
Source: System Admin		

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Fit Criterion: The language is changed successfully.
Dependencies: The to-be-changed-to language must exist. Refer to F_3.1.4_02.
Rank of importance: Essential
Supporting Materials: None
History: <ul style="list-style-type: none"> Created by Do Nguyen 25/10/2004 Edited by Thu Nguyen 26/10/2004

Requirement #: F_3.1.4_05	Requirement Type: Functional	Use case #: CM_72
Description: The system should allow a user of any role to choose displaying language (English/Vietnamese) of the system.		
Rationale: A user wants to change choose displaying language of the system.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: The language is changed successfully.		
Dependencies: The to-be-changed-to language must exist. Refer to F_3.1.4_02.		
Rank of importance: Desirable		
Supporting Materials: None		
History: Created by Thu Nguyen 22/11/2004		

Requirement #: F_3.1.4_06	Requirement Type: Functional	Use case #: SA_63
Description: The system should provide a System Admin a GUI to change current displaying theme of the system.		
Rationale: System Admin wants to change current displaying theme of the system.		
Source: System Admin		
Fit Criterion: The theme is changed successfully.		
Dependencies: The to-be-changed-to theme must exist. Refer to F_3.1.4_03.		
Rank of importance: Optional		
Supporting Materials: None		
History: <ul style="list-style-type: none"> Created by Do Nguyen 25/10/2004 Edited by Thu Nguyen 26/10/2004 		

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3.2 Non-Functional Requirements

Requirement #: NREQ_01	Requirement Type: Performance	Use case #: NONE
Description: The system should be able to work 24 hours per day, seven days per week except during the maintenance time.		
Rationale: All users want to use the system at anytime (24 hours per day, seven days per week).		
Source: System Admin, Librarian, Borrower		
Fit Criterion: Any authorized user can use the system at anytime (24 hours per day, seven days per week).		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: Mr. Hoa's idea - FTR		
History: Created by Thu Nguyen 25/10/2004		

Requirement #: NREQ_02	Requirement Type: Performance	Use case #: NONE
Description: The system should response to any action of any user within 12 seconds.		
Rationale: A user wants to receive response to his action quickly.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: Any response to any user's action should be performed within 30 seconds.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: Mr. Hoa's idea - FTR		
History: Created by Thu Nguyen 25/10/2004		

Requirement #: NREQ_03	Requirement Type: Performance	Use case #: NONE
Description: The system should display search results within 12 seconds.		
Rationale: A user wants to receive results of his query quickly.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: Search results should be displayed within 30 seconds		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen 25/10/2004		

Requirement #: NREQ_04	Requirement Type: Performance	Use case #: NONE
Description: The system should generate a report within no more than 2 minutes.		
Rationale: A user wants to have a report quickly.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: Each report should be generated within 30 seconds		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen 25/10/2004		

Requirement #: NREQ_05	Requirement Type: Usability	Use case #: NONE
Description: The system should maintain consistency in user interfaces by reflecting and following exactly the User Interface Prototype.		
Rationale: To provide users with consistent user interfaces.		

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Source: System Admin, Librarian, Borrower
Fit Criterion: All pages of the system follow the defined template and structure as specified in User Interface Prototype.
Dependencies: None
Rank of importance: Essential
Supporting Materials: None
History: Created by Thu Nguyen 28/10/2004

Requirement #: NREQ_06	Requirement Type: Usability	Use case #: NONE
Description: The system should provide built-in Online Help for the user. Online Help shall include step by step instructions on using E-Library system and definitions for terms and acronyms.		
Rationale: To guide users in using the system.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: Online Help is provided and accessible to all users.		
Dependencies: None		
Rank of importance: Desirable		
Supporting Materials: None		
History: Created by Thu Nguyen 28/10/2004		

Requirement #: NREQ_07	Requirement Type: Usability	Use case #: NONE
Description: The system should not require users to have any specific knowledge or special technical skill to be able to use it. E-Library system should be appropriate for a computer-literate user community with no additional training on the system so that users can use it after at most one day of exploring the system.		
Rationale: Users want to use the system without having to take any training records on the system.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: The users can use E-Library system after at most one day of exploring the system.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen 28/10/2004		

Requirement #: NREQ_08	Requirement Type: Usability	Use case #: NONE
Description: The system should support GUI in English and Vietnamese.		
Rationale: A user wants to use the system in his mother language.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: The system GUI should be displayed in the language set by System Admin.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		
History: Created by Thu Nguyen 25/10/2004		

Requirement #: NREQ_09	Requirement Type: Reliability	Use case #: NONE
Description: The system should be able to recover from failure after no more than 24 hours.		
Rationale: The system should recover from failure as soon as possible to support 24/7 services.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: The system should recover after no more than 24 hours.		
Dependencies: None		
Rank of importance: Essential		
Supporting Materials: None		

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History: Created by Thu Nguyen 28/10/2004

Requirement #: NREQ_10	Requirement Type: Security	Use case #: NONE
Description: The system should automatically log out after ten minutes of being idle and ask the user to re-log in.		
Rationale: To control authorized usage of the system.		
Source: System Admin, Librarian, Borrower		
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 Thu Nguyen 25/10/2004		

Requirement #: NREQ_11	Requirement Type: Reliability	Use case #: NONE
Description: The system should be able to support up to 500 simultaneous users at any time.		
Rationale: To support simultaneous usage of the system.		
Source: System Admin, Librarian, Borrower		
Fit Criterion: The system should successfully allow 500 simultaneous users at any time.		
Dependencies: None		
Rank of importance: Desirable		
Supporting Materials: None		
History: Created by Thu Nguyen 25/10/2004		

Requirement #: NREQ_12	Requirement Type: Usability	Use case #: NONE
Description: The system should follow the W3C standards.		
Rationale: To support international web-based application standards.		
Source: System Admin, Librarian, Borrower		
Fit Criterion:		
Dependencies: None		
Rank of importance: Desirable		
Supporting Materials: None		
History: Created by Thu Nguyen 25/10/2004		

Requirement #: NREQ_13	Requirement Type: Performance	Use case #: NONE
Description: The system should be able to store at least 1000 user profiles and 1000 resource profiles.		
Rationale: To support international web-based application standards.		
Source: System Admin, Librarian, Borrower		
Fit Criterion:		
Dependencies: None		
Rank of importance: Desirable		
Supporting Materials: None		
History: Created by Thu Nguyen 25/10/2004		

Requirement #: NREQ_14	Requirement Type: Usability	Use case #: NONE
Description: The system should have user documentation and user manual to instruct the users to use E-Library system.		
Rationale: To support international web-based application standards.		
Source: System Admin, Librarian, Borrower		
Fit Criterion:		

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Dependencies: None
Rank of importance: Desirable
Supporting Materials: None
History: Created by Thu Nguyen 25/10/2004

3.3 Use-Case Specifications

Please refer to UCS_OverallUseCaseSpecification.doc

3.4 Supplementary Requirements

Requirement #: F_3.4	Requirement Type: Functional	Use case #: CM_73
Description: The system should provide any user with a GUI to login to E-Library system.		
Rationale: Users want to login to E-Library system		
Source: System Admin, Librarian, Borrower		
Fit Criterion: A login page is displayed and the user can login to E-Library system.		
Dependencies: None		
Rank of importance: Critical		
Supporting Materials: None		
History: Created by Thu Nguyen 02/01/2005		

3.5 Functional Requirements and Use Cases Matrix

Refer to MATRIX_Milestone3.xls