E-Library System

Software Requirements Specification v8.0

January 11, 2012

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Executive Overview

The E- Library System is a web-based library system wherein the crews and admin would be able to manage all the files such as memos and manuals for Frabelle. It would also allow them to add files by uploading a file or by typing the manual itself into the system.

The **non-admin** objectives for the E- LIBRARY System are to:

- View the list of manuals for all the machines and equipments in Frabelle.
- Know the proper trouble-shooting of equipments and machines through the manuals in the E-Library System.
- View the memos sent by the management.
- Download files to be used during the trouble shooting of an equipment or machine.

The **admin** objectives for the E- LIBRARY System are to:

- Add manual/s for an equipment or machine.
- Update manual/s for an equipment or machine.
- Delete manual/s for a non-existing equipment or machine.
- Download files to be used by crews during the trouble shooting of an equipment or machine.
- Create memos sent by management.

The **E- Library System** objectives are to:

- Minimize the possibility of error since crews know the proper ways of using an equipment/ machine.
- Maximize the productivity of crews within a vessel since they would be able to fully understand the function and know-how of a particular equipment/ machine.
- Maximize the productivity of a particular equipment/ machine.
- Maximize the level of communication of the crews and management.

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I. Introduction

1.1. Purpose

This SRS aims to describe the system to be produced including its functional and non-functional requirements for the E- Library System. This will serve as a reference during the entire project development phase. This document is intended to be used by the members of project development team which will implement and verify the specified functions of the system.

1.2. Project Scope

This SRS discusses the goals, objectives and functions of the E- Library System. Several chapters of this document will further explain the functional and non- functional requirements of the E- Library system.

The objectives of this system include:

- ⚓ To provide information to crews regarding vessels' equipments and machines.
- ⚓ To store manuals and guides how to use each equipment and machines.
- ⚓ To allow manual adding and uploading of files into the system.
- ⚓ To allow management to disseminate memos effectively.

The limitations of this system include:

- ⚓ It only stores manuals of equipments, manuals of machines, and memos.
- ⚓ It does not store all the documents in Frabelle.

1.3. Intended Audiences

The intended audiences for this specification of the E- LIBRARY System include:

- ⚓ **Frabelle Fishing Corporation**
  - IT department
  - Management
- ⚓ **Integrated Open Source Solutions (Project Development Team)**
  - Project Manager

- Programmers whose software components must implement the requirements specified in this SRS.

- Designers whose design must meet the requirements specified in this SRS

- SQCs, who must ensure that these requirements are followed and met.

⚔ **Users**

- Crews who will be able to view the manuals and files in the system.

- Admin who will be responsible in adding, updating and deleting files within the system.

1.4. References

1. Wiegers, Karl. Cafeteria Ordering System Software Requirements Specification, Version 1.0, http://www.tol.oulu.fi/kurssit/otekniikka/papers/COS_SRS.pdf

2. Donald, Firesmith. Global Personal Marketplace Software Requirements Specification, Version 1.0, www.it.uu.se/edu/course/homepage/pvt/SRS.pdf

1.5. Specification Overview

This document is made up of six sections:

⚔ **Introduction,** which describes the purpose, scope and intended users of E- Library system.

⚔ **Overall Description,** gives details of the intended users, describes the existing system, and then provides an overview of E- Library System.

⚔ **Functional Requirements,** specifies the functional system requirements in terms of a use case model consisting of each external's use cases and use case paths.

⚔ **Non- functional Requirements,** describes the specific non-functional requirements of the system such as: Performance Requirements, Safety Requirements, Security Requirements and Software Quality Attributes.

⚔ **External Interface Requirements** describes the interfaces (User Interfaces, Hardware Interfaces, Software Interfaces, and Communication Interfaces) of the system. Includes user response such as: clicking of mouse, input using keyboard, etc.

⚔ **Appendices,** contains the data dictionary and system mock-ups.

II. Overall Description

2.1. Product Perspective

The E- Library system is a new system that aims to replace the manual way for crews to view the manuals and files for all equipments and machines of Frabelle. Through this system, the crews are able to know the different instructions for each equipment/ machine and may verify information while they are aboard, as long as they have an internet connection. Also, they are able to view memos sent by management through this system.

2.2. User Classes and Characteristics

Admin An admin is someone from the management who may add, update or delete a file into the system. He/she is the one responsible for maintaining the files in the system.

Crew A crew is an employee of Frabelle who may only view manuals or files from the system. A crew member may not add, delete and update a system unless he/she is assigned as an admin of the system.
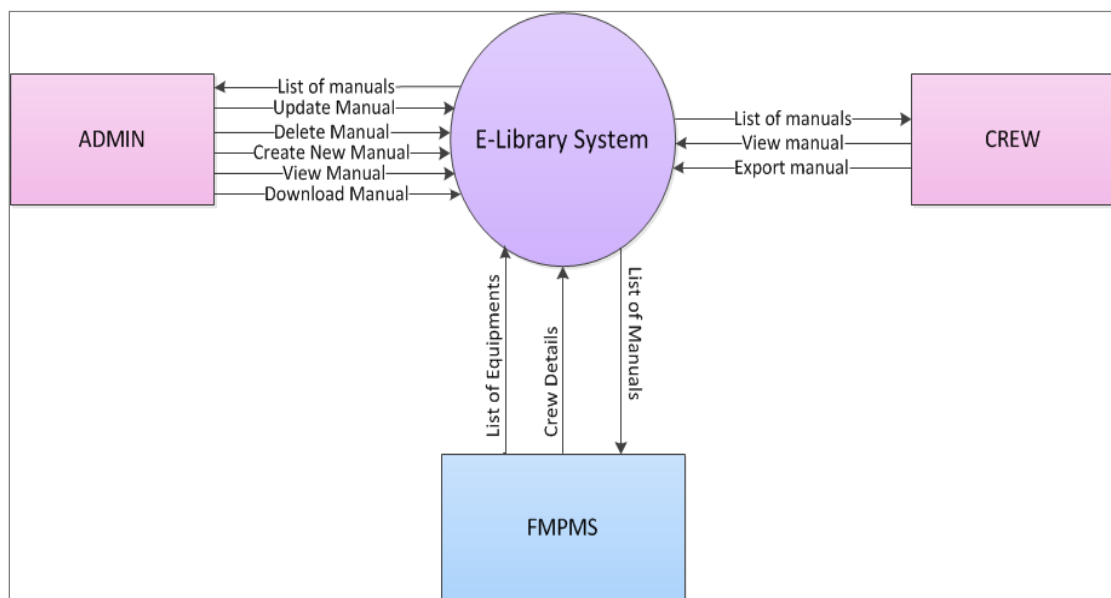
Figure 1

Context Diagram of version 1.0 of E- Library System

2.3. Operating Environment

OE-1: The E- Library system shall operate with any web browser such as: Mozilla Firefox, Google Chrome and Internet Explorer all in its latest stable version. Mozilla Firefox version 7.0 is the most recommended web browser to be used by the users.

OE-2: The E- Library system shall operate on a server running Windows 7 32-bit and Apache Web Server.

OE-3: The E-Library system shall be available only on vessels with internet connection.

OE-4: PC to be used should have an installed Adobe Flash Player.

2.4. Design and Implementation Constraints

CO-1: The system shall use PostgreSQL as its database management system.

CO-2: All scripts shall be written in Python.

2.5. User Documentation

UD-1: A user manual will be made available to the users for them to fully understand the parts and functions of the system.

UD-2: A user demo shall be conducted before the system implementation.

2.6. Assumptions & Dependencies

AS-1: The E- Library system is accessible by crews 24/7 in vessels with internet connection.

AS-1: Employees in the office may access the ELS as long as they have internet connection.

III. Functional Requirements
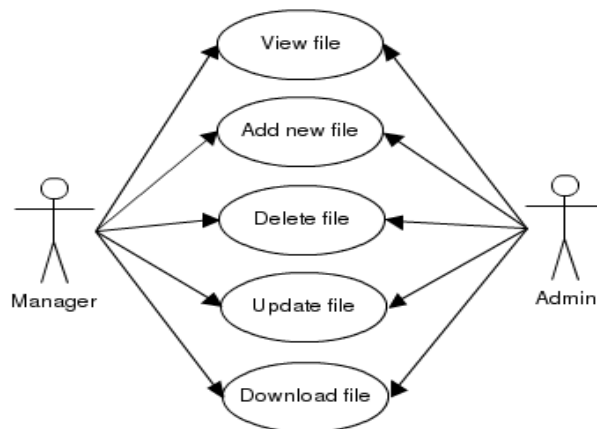
3.1. Summary Use Case Diagrams

The following use case diagrams summarize the functional requirements for the E- Library system:

- ⚔ Admin Summary Use Case Diagram
- ⚔ Manager Summary Use Case Diagram
- ⚔ Private Summary Use Case Diagram
- ⚔ Public Summary Use Case Diagram

Figure 2

Manager and Admin Summary Use Case Diagram
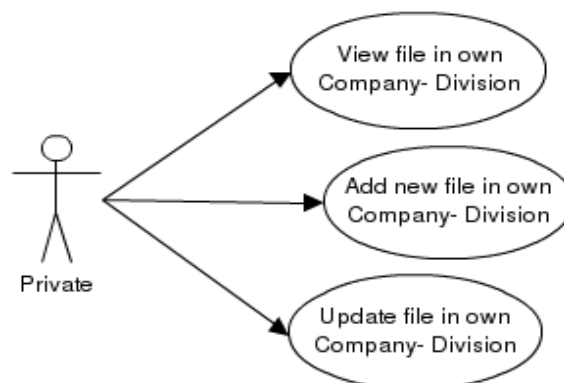
Figure 3

Private Summary Use Case Diagram
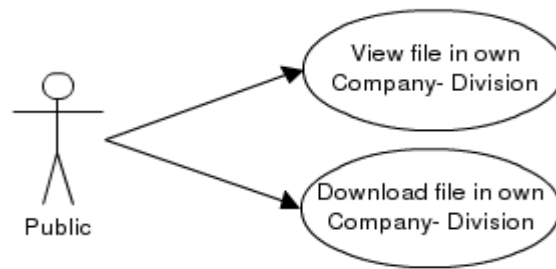
Figure 4

Public Summary Use Case Diagram

3.2. External Roles

3.2.1. Manager

Definition

A *manager* is an access level/ group pertaining to Frabelle's management.

Responsibilities

These are the following responsibilities of a manager:

- ⚔ Monitor the Electronic Library System.
- ⚔ Update the Electronic Library System.
- ⚔ Relay important memos thru the ELS.
- ⚔ Create file/s into the ELS.

Required Capabilities

A manager needs the following skills to effectively use the E- Library system:

- ⚔ Must know basic computer skills.

Use Case Diagram

See figure 2 for the manager use case diagram.

3.2.2. Admin

Definition

An *admin* is a person assigned to maintain the E-Library system.

Responsibilities

These are the following responsibilities of admin:

- ⚔ Maintain the E-Library system.
- ⚔ Update files/ manuals from the system.
- ⚔ Add new files/ manuals for new equipments/ machines.
- ⚔ Delete files/ manuals for non-existing equipments/ machines.
- ⚔ Save memos and other files into the system as requested by the management.

Required Capabilities

An admin needs the following skills to effectively use the E- Library system:

- ⚔ Must know basic computer skills.

Use Case Diagram

See figure 2 for the admin use case diagram.

3.2.3. Private

Definition

Private is an access level/group pertaining to heads/supervisors in each division.

Responsibilities

These are the following responsibilities of admin:

- ⚔ View files in ELS for a particular division.
- ⚔ Add new files/ manuals for a particular division.
- ⚔ Update files in ELS for a particular division.

Required Capabilities

Private needs the following skills to effectively use the E- Library system:

- ⚔ Must know basic computer skills.

Use Case Diagram

See figure 3 for the private use case diagram.

3.2.3. Public

Definition

Public is an access level/group pertaining to employees in a particular division.

Responsibilities

These are the following responsibilities of admin:

⚔ View files in ELS for a particular division.

Required Capabilities

Public needs the following skills to effectively use the E- Library system:

⚔ Must know basic computer skills.

Use Case Diagram

See figure 4 for the public use case diagram.

3.2. Use Cases

3.2.1. User Creates New File

NUMBER	UC01	
USE CASE NAME:	**User Creates New File**	
ACTOR(S):	**Admin, Manager, Private**	
BASIC FLOW	**Actor Action**	**System Response**
	Step 1: User clicks the "E-Library" tab.	
		Step 2: System displays "List of Files"

		page.
	Step 3: User clicks the "Create Add File" link.	
		Step 4: System displays "Add File" page.
	Step 5: User fills out the necessary fields.	
	Step 6: If User wants to attach a file, he/she must click the "Upload a file" button at the attachments field.	
		Step 7: System displays a modal box where user must locate the file/s to be uploaded.
	Step 8: User clicks the file/s to be uploaded.	
	Step 9: User clicks the "Open" button.	
		Step 10: System displays the "Add File" page with the newly attached file/s.
	Step 11: User clicks "Upload and Save" button.	
		Step 12: System updates the database.
		Step 13: System redirects user to the "List of Files" page.

		Step 14: System displays a message. (SM01)
ALTERNATIVE FLOW	**1. at Step 6:** If User does not want to attach a file, he/she may already click the "Upload and Save" button.	
		System redirects user to the "List of Files" page.
		System displays a message (SM01).
	2. at step 6: If User wants to remove all attachments, User clicks the "Select All" button.	
		System unmarks all the checkboxes of the attachments of the file.
	User clicks the "Upload and Save" button.	
		System redirects user to the "List of Files" page.
		System displays a message (SM01).
	3. at Step 5: If User wants to add a new category, he/ she must click the "Add (+)" icon at the right side of the "Category" field.	

		System displays a modal box.
	User needs to type the desired name for the new Category.	
	User clicks the "Create" button.	
		System redirects user to "Add File" page with the newly added category.
	4. At step 11:	
	If User missed to fill out a required field/s	
		System displays error message (EM01).
	5. at Step 5:	
	If User wants to add a new Company, he/ she must click the "Add (+)" icon at the right side of the "Company" field.	
	User needs to type the desired name for the new Company.	
		System displays a modal box.
	User clicks the "Create" button.	
		System redirects user to "Add File" page with the newly added

		Company.
	6. at Step 5: If User wants to add a new Division, he/ she must click the "Add (+)" icon at the right side of the "Division" field. User needs to type the desired name for the new Division. User clicks the "Create" button.	 System displays a modal box. System redirects user to "Add File" page with the newly added Division.
PRECONDITION	User must be registered into the FMPMS and E-Library system. User is logged in as Manager, Admin or Private.	
POSTCONDITON	User was able to add a New File/s with/ without attachment into the system.	
SPECIAL REQUIREMENTS	Fields required: Category, Name, Reference Number, Company, Division Description, Author, Date Created Either of fields Content and Attachments should contain data.	

3.2.2. User Views File

NUMBER	**UC02**
USE CASE NAME:	**User Views File**

ACTOR(S):	Admin, Manager, Private, Public	
BASIC FLOW	**Actor Action**	**System Response**
	Step 1: User clicks "E-Library" tab.	
		Step 2: System displays the list of files.
	Step 3: On the "Keyword/Search" box at the right side of the page, User must type the file name or any keyword connected to the file that he/she wants to view.	
		Step 4: System displays files that matches the keyword or file name.
	Step 5: User clicks the file name of the manual.	
		Step 6: System displays the "View File" page of the file selected.
ALTERNATIVE FLOW	**1. at Step 5:** User may click the "View" link at the "Actions" column.	**1.** System displays the "View File" page of the file selected.
PRECONDITION	User must be registered into the FMPMS. User must be logged in to the FMPMS.	
POSTCONDITON	User views selected file/s.	
SPECIAL REQUIREMENTS	Manager and Admin can view all files in the ELS. Private and public can only view files in his/her company/ division. A non- admin user may also view his/her authored file.	

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3.2.3. User Updates File

NUMBER	UC03	
USE CASE NAME:	**User Updates File**	
ACTOR(S):	**Admin, Manager, Private**	
BASIC FLOW	**Actor Action**	**System Response**
	Step 1: On the smart "Keyword/Search" box at the right side of the page, user must type the file name or a keyword of the file that he/ she wants to update.	
		Step 2: System displays search results.
	Step 3: User clicks the "Edit" link at the "Actions" column.	
		Step 4: System displays "Edit File" page of the file selected to be updated.
	Step 5: User updates field/s.	
	Step 6: User clicks the "Upload and Save" button.	

		Step 7: System redirects User to the "List of Files" page. **Step 8**: System displays a message. (SM04)
ALTERNATIVE FLOW	**1. at Step 6:** User clicks the "Back" button. **2. at Step 5:** If User wants to remove all attachments of the selected file, User clicks the "Select All" button. **3. at Step 7:** If User missed to fill out a required field/s. **4. at Step 6:** If user wants to add more files, user clicks "Upload a file" button. User follows steps 8-11 of UC01.	1. System ignores changes and redirects user to "List of Files" page. System unmarks all the checkboxes of all the attachments of the opened file. System displays error message (EM01). System displays a modal box where user must locate the file/s to be uploaded. System displays a message (SM04).

PRECONDITION	User must be registered into the FMPMS and E-Library system. User is logged in as admin, manager or private.
POSTCONDITON	User updates selected file/s.
SPECIAL REQUIREMENTS	Fields required: Category, Name, Reference Number, Company, Division Description, Author, Date Created
	Either of fields Content and Attachments should contain data.
	Manager and admin may update all files in the ELS.
	Private can only update file/s in his/her division.
	A non- admin user may also edit his/her authored file.

3.2.4. User Downloads File

NUMBER	**UC04**
USE CASE NAME:	**User Downloads File**
ACTOR(S):	**Admin, Manager, Private, Public**

BASIC FLOW	Actor Action	System Response
	Step 1: User must view the file. (See UC01).	
		Step 2: System displays the "View File" page of the file selected.
	Step 3: User selects an attachment in the file that he/ she wants to download then clicks the "Download" link at the end of the file name.	
		Step 4: System displays a download

		dialog box.
	Step 5: User clicks "Save File" radio button. **Step 6**: User clicks "OK" button.	
		Step 7: System starts file download.
ALTERNATIVE FLOW	**1. at Step 6:** If User does not want to continue the file download, he/she clicks the "Cancel" button.	**1.** System cancels file download and redirects user back to the "View File" page.
PRECONDITION	User must be registered into the FMPMS. User must be logged in to FMPMS. Perform steps in UC01 first.	
POSTCONDITON	User was able to download attachment/s from a file/s.	
SPECIAL REQUIREMENTS	Manager and admin may download attachment/s in all the files in ELS. Private and public can only download attachment/s from files in their company/division.	

3.2.5. User Deletes File

NUMBER	**UC05**	
USE CASE NAME:	**User Deletes File**	
ACTOR(S):	**Admin**	
BASIC FLOW	**Actor Action**	**System Response**
	Step 1: On the smart	

	"Keyword/Search" box at the right side of the page, User must type the file name or a key word of the file that he/ she wants to delete.	
		Step 2: System displays search results.
	Step 3: User clicks the "Delete" link at the "Actions" column.	
		Step 4: System displays a modal box.
	Step 5: User clicks the "OK" button.	
		Step 6: System displays a message. (SM03)
ALTERNATIVE FLOW	**1. at Step 4:** User clicks the "Cancel" button.	**1.** System closes modal box, redirects user back to "List of Files" page.
PRECONDITION	User must be registered into the FMPMS and E-Library system. User is logged in as admin or manager.	
POSTCONDITON	User deletes selected file/s.	
SPECIAL REQUIREMENTS	A non- admin user may also delete his/her authored file.	

3.2.5. System Messages

No.	Message
SM01	"Name" successfully created.

SM03	"Name" successfully deleted.
SM04	"Name" successfully updated.
EM01	This field is required.

IV. Non Functional Requirements

4.1. Performance Requirements

PE-1:   System can be accessed by many users simultaneously.

PE-2:   All reports generated by the system can be fully downloaded in 5-10 minutes (may vary depending on the size of the report).

PE-3:   Search results shall take no longer than 5 minutes for it to fully appear onto the screen (may vary depending on the query).

PE-4:   System displays error and confirmation messages to users.

PE-5:   System has "Smart Search" fields.

4.2. Safety Requirements

SA-1:   Since some crews will be accessing the system inside a vessel in the middle of the sea, then there is a greater risk that the physical host of the system will be damaged and will be inaccessible to users. Physical host may be damaged by water so it should be placed in a well- ventilated, dry room in the vessel.

4.3. Security Requirements

SE-1:   Only members of the FMPMS will be given access to the E-Library system.

SE-2:   The system will only allow "manager" and "admin" of E-Library to add and edit/ update all files in the system.

SE-3:   "Private" group will only be able to view/edit/add files for his/her division.

SE-3:   "Public" group will only be able to view and download file/s from his/her division.

4.4. Software Quality Attributes

SQ-1:   **Safety**: This system does not directly or indirectly cause harm to life or property.

SQ-2:   **Usability**: This system is easy to use, its design is user-friendly.

SQ-3:   **Accessibility**: Since this is a web based system, it can be accessed by users with internet connection.

SQ-4:   **Accuracy**: All files (memos, manuals, etc.) in the system are correct and updated.

SQ-5:   **Interoperability**: This system can be accessed using several web Select Filesrs (Mozilla, Google Chrome, and Internet Explorer). It is however advisable to use Mozilla Firefox in accessing the system.

V. External Interface Requirements

5.1. User Interfaces

UI-1:   Member may navigate the system using the mouse and keyboard.

UI-2:   System uses data tables and graphical images for a more organized way of displaying records and files.

UI-3:   System has "Smart Search" fields.

5.2. Hardware Interfaces

HI-1:   Network (to allow users to connect in the production server)

HI-2:   Client Computers (used to access the website)

HI-3:   Server (to manage access in the network)

HI-4:   Production Support Systems (e.g. back-up, UPS)

5.3. Software Interfaces

SI-1:   Operating Systems (Windows 7 32-bit)

SI-2:   Web Select Filesr (Mozilla Firefox v7.0)

SI-3:   Database Management System (PostgreSQL)

SI-4:   Django framework.

5.4. Communication Interfaces

CI-1:   Internet connection

CI-2:   Web Select Files

VI. Appendices

6.1. Appendix A

See SRS for FMPMS for the database design of ELS.

6.2. Appendix B

Visit mockflow.com for the system mock-ups.