

# Software Functional Specifications

## **System for building and nurturing collaborative communities**

**Version: 1.0**

By  
Mr. Pankaj Ajit Patil

**Department of Computer Science and Engineering  
IIT Bombay-76**

## Table of Contents

Sr. No.	Content	Page No
1	1. Introduction	3
	1.1 Purpose	3
	1.2 Scope	3
	1.3 Definition	3
2	2. Overall Description	4
	2.1 Users and profile	4
	2.2 Create Digital Asset using user friendly Editor Pad	4
	2.3 Review Digital Asset	4
	2.4 Discussion forum	4
	2.5 Digital Assets uploading and downloading	4
	2.6 Content Rating	4
	2.7 Searching Digital Assets	4
	2.8 Watchlist	5
	2.9 Email Notification	5
	2.10 Version control	5
	2.11 Content Revision	5
3	3. Functional Requirements	6
	3.1 User Class: Casual User	6
	3.2 User Class: Editor	8
	3.3 User Class: Reviewer	10
	3.4 User Class: Administrator	11
4	4. Mapping between Functional requirements and User Class	12
5	5. References	14

## 1. Introduction

This section describes a scope and purpose of document. Also describes various definitions and terms used in this document.

### 1.1 Purpose

The purpose of this document is to give a detailed description of the functional specifications, for the “System for Building and Nurturing collaborative communities” software. It will illustrate the purpose and complete declaration for the development of system. This document is primarily intended to the software developers to be used as a reference for developing the first version of the system.

### 1.2 Scope

The “System for Building and Nurturing collaborative communities” aims to develop ecosystem to create, edit, review, collate, and preserve the rich Indian cultural heritage in the form of digitized assets such as texts, manuscripts, books, audio, video, images, and such other artifacts.

### 1.3 Definitions

Term	Definition
Administrator	System administrator is a registered user of the system, who is given specific permission for managing and controlling the system
Editor	Editor is a registered user of the system, who creates or uploads new digital asset in any form
Reviewer	Reviewer is a registered user of the system, who reviews, edits and publish digital assets contributed by contributor. Reviewer can also create digital asset.
Causal User	Causal User is a not registered user of the system, who reads, downloads various digital assets.
Community	Group of registered users, having interest in the same knowledge domain.
FR	Functional requirement
Watchlist	Dashboard displaying list of pending digital assets for review

## **2. Overall Description**

“System for building and nurturing collaborative communities” is a platform for creating, editing, and publishing digital assets of the rich Indian cultural heritage in the form of audio, video, images, texts, manuscripts, books, and such other artifacts. The web based system for content collaboration permits users to access the system from any machine, from anywhere.

The overall description of the system is as follows.

### **2.1 Users and profile**

The users’ of the system (i.e. editors, reviewers, and administrator) need to be registered. The system stores users’ personal information securely. The system stores all users’ activity log, which involves different activities on system and content contributions in the system.

### **2.2 Create Digital Asset using user friendly Editor Pad**

The System provides user with Editor Pad, for writing or editing document. The system provides text formatting options like bold face letters, italicized letters, font size, font type, etc.

Editor Pad is easy to use and user friendly online notepad, wherein editor can insert text directly, don’t need any type setting or scripting language.

### **2.3 Review Digital Asset**

Users with Reviewer authority, reviews the content (any digital asset) submitted by editor.

Reviewer writes suggestions in discussion forum for further improvement in the content submitted by the editor.

### **2.4 Discussion forum**

Discussion forum serves bi-lateral communication medium between editor and reviewer, during the editing or revision phase of the content. Discussion forum also facilitates threaded communication between casual users, editors and reviewers, after publishing content.

### **2.5 Digital Assets uploading and downloading**

System facilitates to upload and download all types of digital assets, for the registered users of the system.

### **2.6 Content Rating**

Any user can enter rating for content. All the ratings given for the content, are stored in the system, and the system displays cumulative rating of the content along with the content. Rating of the content indicates the public acceptance of the content.

### **2.7 Searching Digital Assets**

System facilitates the users of the system, the search facility. Users can use search facility for quick search, and access of intended digital asset.

There are two ways of the search available in the system as follows:

**a. Keyword based searches** – In this method of search, user can enter the keyword, for the search. The system displays all the matching results.

In this method system searches for matching keyword entered by user with, the titles of document and keywords tagged in the content by the editor.

**b. Browse through Community Hierarchies-** User can browse through community from top to bottom hierarchy. The system permits multi-level hierarchy of communities. (Such as Community-> Sub-Community -> Sub-Sub-Community -> and so on -> Topic ).

## **2.8 Watchlist**

System displays contents pending for review in the Watchlist. Watchlist is accessible for reviewers only, wherein reviewer views digital assets submitted, for review by editor. Reviewer can access contents in community for which, reviewer is authorized to review documents.

## **2.9 Email Notification**

Email notifications are sent among the editor and reviewers, for every activity during review process. Also Email notifications are sent, for every activity in discussion forum, after publishing the document.

## **2.10 Version control**

The system stores all the versions of the content revision. Whenever editor makes changes in the content and saves it, the content is stored with system generated version number, along with date and time stamp. Editor can refer version control for the reference of content editing history.

## **2.11 Content Revision**

The editor accesses documents pending for modification through, content revision. Wherein, editor finds documents revised by the reviewer, and editor checks for suggestions and remarks.

### 3. Functional Requirements

This section includes the requirements that specify all the fundamental actions of the software system.

#### 3.1 User Class: Casual User

##### **ID FR1:**

**Title:** Access web based system

**Description:** User enters appropriate web address in the address bar of any browser and gets access to the system. Given the user has accessed system, system displays home page, wherein, system displays various digital assets catalog (aka community catalog), search field, etc.

##### **ID FR2:**

**Title:** Search for digital asset in Community catalog.

**Description:** System displays community catalog arranged in alphabetical order, user browse over the various catalog. System navigates easily across various catalog communities.

##### **ID FR 3:**

**Title:** View resources in sub-communities (aka child members of community catalog).

**Description:** User selects certain community catalog and enters in it, system displays various sub-communities listed under the main community.

##### **ID FR 4:**

**Title:** View topics belonging to sub-community.

**Description:** User browses over sub-communities and, selects the intended topic. System displays list of topics available under the sub-community.

##### **ID FR 5:**

**Title:** View digital assets available for selected topic.

**Description:** User selects topic under the sub-community, system displays various digital assets available for the topic selected by the user. Digital assets can be in any form, text, audio, video, images ,etc.

**ID FR 6:**

**Title:** View or open the digital asset.

**Description:** User selects digital asset available under the selected topic, and views the same. System provides easy navigation for the user to, go back to the Main Community, Sub-Community, Topics, digital assets etc.

**Dependency:** User machine should have appropriate plugins installed for opening audio, video, and pdf files etc.

**ID FR 7:**

**Title:** Download the digital asset.

**Description:** User views the digital asset and proceeds for downloading for sake of offline access. System ask user to login if user is having user account, else register in system using sign up. If user login in the system, user downloads it.

**Dependency:** User is registered in the system.

**ID FR 8:** Write in discussion forum

**Title:** Write in discussion forum

**Description:** User views the digital asset and proceeds further for writing in discussion forums in case of any doubts. System ask user to login if user is having user account, else register in system using sign up. If user login in the system, user can write in participate in discussion forum.

**Dependency:** User is registered in the system.

**ID FR: 9**

**Title:** Content contribution to system.

**Description:** User login to system and proceed for contribution.

**Dependency:** User is registered in the system.

**ID FR 10:**

**Title:** Digital asset search through search field.

**Description:** User enters keyword in the search field, system displays list of assets of all type, for which keyword matches. Keyword match can be with title of asset or keywords tagged by editor.

**ID FR 11:**

**Title:** Rating the digital asset.

**Description:** User views the digital asset and gives the rating to the asset, which is stored in the system.

### **3.2 User Class: Editor**

**ID FR 12:**

**Title:** User registration in the system

**Description:** User enters personal details such as name, email address, occupation, contact no, content creation interests, etc, with username and password for system. System creates account for the user.

**ID FR 13:**

**Title:** Login in to the system

**Description:** User enters the username and password. System checks for the entered details and provides access if entered details are correct, else it asks to re-enter.

**ID FR 14:**

**Title:** Content Creation

**Description:** Given the user is logged in the system, user proceeds for creating content. User selects community, sub-community, type of digital asset (text, audio, video, etc.) and enters the title for the content. System redirects, to the appropriate page based on type of asset to be contributed by the user.



**ID FR 15:**

**Title:** Upload Content

**Description:** If the user intends to contribute audio or video type of digital asset, user is redirected to page, where system provides facility to user to upload the content (video/audio). User selects the multimedia file from users' storage disc, writes appropriate name and uploads it. System stores uploaded file in the server storage space, and displays entry in watchlist module, from where reviewers access content for the review purpose.

**ID FR 16:**

**Title:** Editor pad for writing textual content

**Description:** : If the user intends to contribute in the text format, system redirect user to editor pad, wherein user can type letters, add images. System also provides the facilities for text formatting like, bold, underline, italicize, bullets, font size, font format, etc. By using all the resources available user creates document, and adds keywords in the tag field and submits document. Submitted document is stored in the server storage space with system generated version number for the document with date and time stamp. System also displays entry in the watchlist module, from where reviewers access content for the review purpose.

Keywords added in tag field are stored as meta data and are used for searching the document.

**ID FR 17:**

**Title:** Revising content

**Description:** After submitting document for review by reviewer, user checks status of submitted document in content revision module. When user finds that document has been reviewed by reviewer, user (editor) looks for correction suggested by reviewer in the discussion forum, and accordingly user revises content (of all type i.e. text, audio, video, etc). After certain number of revisions, content is considered for publishing with common opinion of reviewer and editor.

**ID FR 18:**

**Title:** Document Publishing

**Description:** After final revision of content, user publishes the content (digital asset). All the published documents are made available for casual users wherein casual users can not edit documents, casual users can only read the content. Also casual users can download document if they are registered users of the system.

**ID FR 19 :**

**Title:** Post publishing content revision

**Description:** User can monitor discussion forum, wherein causal users can write feedback, suggestions. Accordingly user can revise the document.

**ID FR 20:**

**Title:** Monitoring user ratings for content

**Description:** User monitors rating given by causal users.

**Note :** Editor user has all the authorities of Causal users, hence all the requirements written for causal users are also applicable for Editors.

**3.3 User Class: Reviewer****ID FR 21:**

**Title:** Reviewer Role assignment

**Description:** When editor writes, and successfully publishes certain number of documents (say 25, set by administrator) in certain community, system automatically changes authority from editor to reviewer.

**ID FR 22:**

**Title:** Reviewing document

**Description:** User checks for contents in watchlist, for certain community. System lists contents submitted by editor in similar community. User selects content file, and opens it. User writes remarks, suggestions in discussion forum, for improvement of content. Remarks and suggestions are visible to editor, who makes changes in document accordingly.

**Note :** Reviewer user has all the authorities of Causal users and editor, hence all the requirements written for causal users and editor are also applicable for Reviewers.

### **3.4 User Class: Administrator**

#### **ID FR 23:**

**Title:** Administration of system

**Description:** Admin user of the system can add or remove user, change authorization etc. Admin user can activate or deactivate various modules of the system.

#### 4. Mapping between Functional requirements and User Class

FR ID	FR Title	Casual User	Editor	Reviewer	Administrator
1	Access web based system	Applicable	Applicable	Applicable	Applicable
2	Search for digital asset in Community catalog.	Applicable	Applicable	Applicable	Applicable
3	View resources in sub-communities (aka child members of community catalog).	Applicable	Applicable	Applicable	Applicable
4	View topics belonging to sub-community.	Applicable	Applicable	Applicable	Applicable
5	View digital assets available for selected topic.	Applicable	Applicable	Applicable	Applicable
6	View or open the digital asset.	Applicable	Applicable	Applicable	Applicable
7	Download the digital asset.	NA	Applicable	Applicable	Applicable
8	Write in discussion forum	NA	Applicable	Applicable	Applicable
9	Content contribution to system	NA	Applicable	Applicable	Applicable
10	Digital asset search through search field	Applicable	Applicable	Applicable	Applicable
11	Rating the digital asset.	Applicable	Applicable	Applicable	Applicable
12	User registration in the system	NA	Applicable	Applicable	Applicable
13	Login in to the system	NA	Applicable	Applicable	Applicable
14	Content Creation	NA	Applicable	Applicable	Applicable
15	Upload Content	NA	Applicable	Applicable	Applicable
16	Editor pad for writing textual content	NA	Applicable	Applicable	Applicable
17	Revising Content	NA	NA	Applicable	Applicable

<b>FR ID</b>	<b>FR Title</b>	<b>Casual User</b>	<b>Editor</b>	<b>Reviewer</b>	<b>Administrator</b>
18	Document Publishing	NA	Applicable	Applicable	Applicable
19	Post publishing content revision	NA	Applicable	Applicable	Applicable
20	Monitoring user ratings for content	NA	Applicable	Applicable	Applicable
21	Reviewer Role assignment	NA	NA	Applicable	NA
22	Reviewing document	NA	NA	Applicable	NA
23	Administration of system	NA	NA	NA	Applicable

## 5. References

- [1] IEEE Software Engineering Standards Committee, “IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications”, October 20, 1998.
- [2] MediaWiki <https://www.mediawiki.org>
- [3] Cynapse community [cyn.in](http://cyn.in)