**Video Cutter**

**Software Requirement Specifications**

**Project Code: VideoCutter**

**Document Code: VideoCutter\_SRS\_v1.0.2.**

HCMC, Jan-2016

**Record of change**

\*A - Added M - Modified D - Deleted

|  |  |  |  |  |
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| Effective Date | Changed Items | A\* M, D | Change Description | New Version |
| Jan 06, 2016 |  | A | The first version | 1.0.1 |
| Jan 06, 2016 | 3.1.2 UC02  3.1.3 UC03 | M | Change Cut Video to Split Video  Describe in more detail the use case for Pick Frame  Minor corrections to the Use Case descriptions | 1.0.2 |
| Jan 06, 2016 | 5.System Constraints  6.Appendices | D | Remove irrelevant information |
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AUTHOR: Name: Rocky Le Signature:

Title: BA Date: 6-Jan-2016

REVIEWERS: Name: \_\_\_\_\_\_\_\_\_\_\_ Signature:

Title: Date:

APPROVAL: Name: \_\_\_\_\_\_\_\_\_\_\_ Signature:

Title: Date:

Name: Signature:

Title: Date:

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Introduction

## Purpose

This Software Requirements Specification provides a complete description of all the functions and specifications of the CRM project developing Customer Relationship Management System. This document is intended to be used by the members of the project team that will implement and verify the correct functioning of the system.

## Definitions, Acronyms, and Abbreviations

|  |  |  |
| --- | --- | --- |
| **#** | **Abbreviations/Terms** | **Explanation** |
| 1 | SRS | Software Requirement Specification |
| 2 | BR | Business Rule |
| 3 | SC | Screen |
| 4 | UC | Use Case |
| 5 | CRUD | Create/Read/Update/Delete a record in database |

Table 1: Abbreviations & Terminologies

## References

|  |  |  |
| --- | --- | --- |
| **#** | **Name** | **Description** |
|  |  |  |

Table 2: Reference

# High Level Requirements

## Product Perspective



This web application shall enable users to upload their videos from their local host to the server, cut the videos up into frames and allow the user to pick and download specific pictures of their choosing. Additional features include video playback before cutting the video, editing the video length and adding borders to the picked pictures.

## Actors and Use Cases Descriptions



### Diagram

**Cut Video into Frames**

**Pick Frames**

**Download Frames**

**Upload Videos**

**User**

**Diagram 01 –Basic Use Cases**

**Cut Video into Frames**

**Pick Frames**

**Download**

**Upload Videos**

**Adjust length**

**Crop from the beginning**

**Crop from the end**

**Add borders**

**Play Video**

**Download Video**

**Download**

**Frames**

**Diagram 02 – Use Cases with Additional Features**

### Actors Description

|  |  |  |
| --- | --- | --- |
| **#** | **Actor Name** | **Definition & Interests** |
| 1 | User |  |
| 2 | System |  |

### Use Cases Description

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Code** | **Name** | **Brief Description** |
| 1 | UC01 | Upload Video | Enable actor to upload videos from the local host onto the server |
| 2 | UC02 | Split Video | Enable actor to split the video into frames |
| 3 | UC03 | Pick Frame | Enable actor to pick the frame for future downloading |
| 4 | UC04 | Download Frame/s | Enable actor to download the picked frames |
|  | | | |
| 5 | UC05 | Adjust Length | Enable actor to cut the viddeo from beginning or the end |
| 6 | UC06 | Add Borders | Enable actor to add borders to the chosen frames |
| 7 | UC07 | Play Video | Enable actor to play back the video before cutting |
| 8 | UC08 | Download Video | Enable actor to download the edited video |

Table 3: Use Case List

### Use Case & Actor mapping

|  |  |  |
| --- | --- | --- |
| **Actor**  **Use Case** | **User** | **System** |
| UC01: Upload Video | **x** |  |
| UC02: Cut Video | **x** |  |
| UC03: Pick Frame | **x** |  |
| UC04: Download Frame | **x** |  |
|  |  |  |
| UC05: Adjust Length | **x** |  |
| UC06: Add Borders | **x** |  |
| UC07: Play Video | **x** |  |
| UC08: Download Video | **x** |  |

## Operating Environment

## Assumption and Dependencies

# Functional Requirements

## Module 01

### UC01: Upload Video

**Use Case Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | Upload Video | **Code** | UC01 |
| **Description** | Enable actor to upload videos from the local host onto the server | | |
| **Actor** | User | **Trigger** | Actor clicks Upload Video button |
| **Pre-condition** |  | | |
| **Post condition** | Return to default position | | |

**Activities**

|  |  |  |  |
| --- | --- | --- | --- |
| **Actor** | | **System** | |
| **Main Flow: Successful Upload** | | | |
| 1 | Actor clicks upload video button, chooses file from the local host to upload |  |  |
|  |  | 2 | The server processes the file, checks file for the correct format and returns to the default position |

**Business Rules**

|  |  |  |
| --- | --- | --- |
| **Rule No.** | **Rule** | **Description** |
|  |  |  |

**System Message**

|  |  |
| --- | --- |
| MS01 | “Incorrect File Format”  Message displayed when the video file is of an incorrect format |

### UC02: Split Video

**Use Case Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | Split Video | **Code** | UC02 |
| **Description** | Enable actor to split the video into frames | | |
| **Actor** | User | **Trigger** | Click Split Video button |
| **Pre-condition** | Actor has already uploaded a video | | |
| **Post condition** | Display frames on the webpage | | |

**Activities**

|  |  |  |  |
| --- | --- | --- | --- |
| **Actor** | | **System** | |
| **Main Flow: Successfully display the frames of the split video** | | | |
| 1 | Actor clicks on the Cut Video button |  |  |
|  |  | 2 | Cuts video into framse using OpenCV connected by Java and ScriptMVC |
|  |  | 3 | Displays the frames on the web through JavaScript and HTML |

**Business Rules**

|  |  |  |
| --- | --- | --- |
| **Rule No.** | **Rule** | **Description** |
|  |  |  |

**System Message**

**N/A**

### UC03: Pick Frame

**Use Case Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | Pick Frame | **Code** | UC03 |
| **Description** | Enable actor to pick the frame for future download | | |
| **Actor** | User | **Trigger** | Actor clicks on the output frames to choose |
| **Pre-condition** | The system has cut the video into frames and displayed them | | |
| **Post condition** |  | | |

**Activities**

|  |  |  |  |
| --- | --- | --- | --- |
| **Actor** | | **System** | |
| **Main Flow: Successfully display frame number and option to download** | | | |
| 1 | Actor clicks on an individual frame to choose the frame |  |  |
|  |  | 2 | System shows the user information about the particular frame (such as frame number) and enables quick download with a click |

**Business Rules**

|  |  |  |
| --- | --- | --- |
| **Rule No.** | **Rule** | **Description** |
|  |  |  |

**System Message**

**N/A**

### UC04: Download Frames

**Use Case Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | Download Frames | **Code** | UC04 |
| **Description** | Enable actor to download multiple frames onto the local host | | |
| **Actor** | User | **Trigger** | Actor clicks on check boxes to pick the frames for donwload |
| **Pre-condition** | Actor has chosen at least one frame | | |
| **Post condition** | Actor successfully downloads the file | | |

**Activities**

|  |  |  |  |
| --- | --- | --- | --- |
| **Actor** | | **System** | |
| **Main Flow: Download multiple picked frames successfully** | | | |
| 1 | Actor clicks on the download button after ticking the frames |  |  |
|  |  | 2 | Server transfers the picked frames onto the user’s local host |

**Business Rules**

|  |  |  |
| --- | --- | --- |
| **Rule No.** | **Rule** | **Description** |
|  |  |  |

**System Message**

|  |  |
| --- | --- |
| MS02 | “Frames Download Complete”  Message displayed upon completion of the download |

## Module 02

### UC05: Adjust Length

**Use Case Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | Adjust Length | **Code** | UC05 |
| **Description** | Enable actor to cut the viddeo from beginning or the end | | |
| **Actor** | User | **Trigger** | Actor clicks button Adjust Length |
| **Pre-condition** | Actor has uploaded a video | | |
| **Post condition** | The system provides a shortened version of the video | | |

**Activities**

|  |  |  |  |
| --- | --- | --- | --- |
| **Actor** | | **System** | |
| **Main Flow: Present the actor with the edited video** | | | |
| 1 | Actor clicks on the Adjust Length button |  |  |
|  |  | 2 | Displays window for the actor to choose by how much to cut the video |
| 3 | Actor enters the number of minutes to cut the videos by and chooses from the beginning or the end |  |  |
|  |  | 4 | Processes the user’s input and outputs a video of the correct length |

**Business Rules**

|  |  |  |
| --- | --- | --- |
| **Rule No.** | **Rule** | **Description** |
|  |  |  |

**System Message**

|  |  |
| --- | --- |
| MS03 | “Edits complete” upon completion of the cropping process |



### UC06: Add Borders

**Use Case Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | Add Borders | **Code** | UC06 |
| **Description** | Enable actor to add borders to the chosen frames | | |
| **Actor** | User | **Trigger** | Actor clicks on the button Add Borders |
| **Pre-condition** | Actor has picked the frames | | |
| **Post condition** | Output of frames with added border | | |

**Activities**

|  |  |  |  |
| --- | --- | --- | --- |
| **Actor** | | **System** | |
| **Main Flow: Successfully add borders to the chosen frames** | | | |
| 1 | Actor clicks on the border design to add to the picked frames |  |  |
|  |  | 2 | Adds borders to the frames |

**Business Rules**

|  |  |  |
| --- | --- | --- |
| **Rule No.** | **Rule** | **Description** |
|  |  |  |

**System Message**

**N/A**

### UC07: Play Video

**Use Case Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | View customer histories | **Code** | UC07 |
| **Description** | Enable actor to play back the video | | |
| **Actor** | User | **Trigger** | Actor clicks on the button Play |
| **Pre-condition** | Video has been cut/edited | | |
| **Post condition** | The web page plays the video | | |

**Activities**

|  |  |  |  |
| --- | --- | --- | --- |
| **Actor** | | **System** | |
| **Main Flow: Playback video successfully** | | | |
| 1 | Actor clicks on the button Play to preview the video before download |  |  |
|  |  | 2 | Streams the edited video |

**Business Rules**

|  |  |  |
| --- | --- | --- |
| **Rule No.** | **Rule** | **Description** |
|  |  |  |

**System Message**

**N/A**

### UC08: Download Video

**Use Case Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | Download Video | **Code** | UC08 |
| **Description** | Enable actor to download the edited video | | |
| **Actor** | User | **Trigger** | Actor clicks button Download Video |
| **Pre-condition** | System has edited the video | | |
| **Post condition** | Actor successfully downloads the file | | |

**Activities**

|  |  |  |  |
| --- | --- | --- | --- |
| **Actor** | | **System** | |
| **Main Flow: Successfully download the video onto the local host** | | | |
| 1 | Actor clicks on the download button |  |  |
|  |  | 2 | Server transfers the edited video onto the user’s local host |

**Business Rules**

|  |  |  |
| --- | --- | --- |
| **Rule No.** | **Rule** | **Description** |
|  |  |  |

**System Message**

**N/A**

# Nonfunctional Requirements

* 1. Interoperability

This subsection specifies the following requirements associated with the ease with which the system can be integrated with other system (e.g., browsers, legacy applications, and required databases).

* The Video Cutter shall interoperate with the following browsers:
* IOP-1) Internet Explorer 11
* IOP-2) Google Chrome 34
* IOP-2) Mozilla Firefox 12
  1. Maintainability

This subsection specifies the following requirements associated with the ease with which the system can be maintained:

* M-1) The Video Cutter shall permit the swapping and upgrade of hardware without down time.
* M-2) The Video Cutter shall permit the upgrade of software without down time.
  1. Performance

This subsection specifies the following requirements associated with the speed with which the system shall function.

* + 1. Capacity

This subsection specifies the following requirements concerning the minimum number of objects that the system can support:

* PER-1) The system shall support a minimum of 1 video.
* PER-2) The system shall support the maximum video length of 10 minutes.
* PER-3) The system shall support a minimum of 10,000 simultaneous interactions.
  + 1. Response Time

This subsection specifies the following requirements concerning the maximum time that is permitted for the system to respond to requests:

* PER-4) All system responses shall occur within 30 seconds.
  + 1. Throughput

This subsection specifies the following requirements concerning how many executions of a given system operation or use case path must the system be able execute in a unit of time:

* TBD
  1. Portability

This subsection specifies the following requirements associated with the ease with which the system can be moved from one environment (e.g., hardware, operating system) to another.

* The CRM shall enable users to use the following environments (e.g., platform and operating system) to interact with The CRM:
* User Personal Computer:

POR-1) PC with minimum of Celeron chip, 2 GBs of RAM, and a 256 kbps ADSL modem

* Operating Systems:

POR-2) Windows 7

POR-3) Mac OS X

* 1. Reliability

This subsection specifies the following requirements associated with the reliability (e.g., mean time between failures, number of failures per unit time) of the system.

* REL-1) The mean time between failures (MTBF) shall exceed 3 months.
  1. Reusability

This subsection specifies the following requirements associated with the degree to which the system can be used for purposes other than originally intended (e.g., as part of other applications).

* REU-1) The Video Cutter shall incorporate OpenCV.
  1. Robustness

This subsection specifies the following requirements associated with the degree to which the system continues to properly function under abnormal circumstances.

* ROB-1) The Video Cutter should gracefully handle invalid input (i.e., detect invalid input, request valid input, and not crash) from all externals:
* The human actors.
  1. Safety

This subsection specifies the following requirements associated with the degree to which the system does not directly or indirectly (e.g., via inactivity) cause accidental harm to life or property (e.g., loss of money or data).

* SAF-1) The Video Cutter shall not damage the video files

# System Constraints

The section documents the major architecture, design, and implementation constraints on the system.

* 1. Business Rules

The subsection documents all required data design constraints.

* 1. Data and Content Constraints

The subsection documents all required data constraints.

* + 1. Databases

The subsection documents all required design constraints regarding the use of databases.

* None
  1. Hardware Constraints

The subsection documents all required constraints associated with minimum or actual hardware.

* None
  1. Software Constraints

The subsection documents all required software constraints.

* + 1. High-Level Languages

The subsection documents all required design constraints associated with the use of high-level programming languages.

* SYSDC-HLL-1) Application server software shall be written in Java and SpringMVC
* SYSDC-HLL-2) User client software shall be written in HTML and JavaScript webpages.

# Appendices

This section documents the following appendices:

* Envisioned Future Enhancements
* Open Issues
* Major TBDs
* Assumptions

## A. Envisioned Future Enhancements

* Additional features, as detailed in Diagram 02

## B. Open Issues

TBD

## C. Major TBDs

TBD

## D. Assumptions

TBD