HIT3061 – Software Team Project - Semester 2, 2013

Leap Motion Development

Software Requirements Specification

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**Table 1. Document Change Control**

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| --- | --- | --- | --- |
| Version | Date | Author | Changes |
| 0.1 | 27/08/2013 | Joshua Stopper | Create Document  Create Content Areas  Names added |

**Table 2. Document Sign Off**

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# – Introduction

*Discuss briefly the software that will be developed. Keep in mind that this document describes what the software must do, so that programmers can ultimately build it.*

Developed by Leap Motion Incorporated, the Leap Motion Device provides motion-tracking technology to the masses with unprecedented accuracy. At up to 200 times a second, the Leap Motion Device can record the coordinates of ones hands and fingers providing accuracy up to 1/100th of a millimeter.

Surgeon Phillip Michael has commissioned this project to determine if it is feasible to test a surgeon’s readiness for operation. In relation to the capabilities of the Leap Motion Device, this means recording a surgeon’s hand for a period of time to test for steadiness. Conversely, the software being developed must determine the difference between standard movement and a tremor, based on the data provided by the Leap Motion Device.

## – Purpose

*Define the purpose of this SRS and identify its target reader or audience.*

If proven effective, the software being developed, along with the Leap Motion Device, will be deployed in a hospital or related environment where surgeons can be tested for operation readiness. Therefore the target audience is a surgeon who is preparing to begin surgery on a patient.

//I don’t like this that much as its very limited

//We need to talk to Phillip Michael about this as it is his product, his vision for what his should be is needed

## – Scope

*Start by providing a name for the software and then list what the software will and will not do. Describe the applications/uses of the software, including its benefit and objectives. Do not list the software requirements, as this should be a high-level summary*

**Name**

* Pre-op Steadiness Validator with Leap Motion

**What the software will do**

* Save leap motion data to a file for accounting
* Replay leap motion data for verification
* Analyze frame data to determine steadiness in hands and fingers
* Analyze frame data to determine if tremors in hand occurred
* Provide a scaled rating based on readiness for operation
* Give a recommendation for operation readiness based on the data recorded

**What the software will not do**

* Be liable in the event that a surgeon has a tremor during operation
* Give a concrete output whether the surgeon is ready for operation

**Application and use of the software**

* F

**Benefits of the software**

* Oversight is given a measure of confidence in the surgeons readiness for surgery
* Surgeons will be vetted for readiness pre-op in terms of stability

**Objective of the software**

* Provide a scaled rating based on the data input determining if the surgeon is ready for operation. This rating is advisory only.

## – Definitions, Acronyms and Abbreviations

*Provide the definition of all terms, acronyms, and abbreviations used in the SRS.*

|  |  |
| --- | --- |
| Word | Definition |
| LM | Leap Motion |
| LMD | Leap Motion Device |
| JS | JavaScript |
| API | Application Programming Interface |
| Local | The software/hardware is being executed/stored on the machine the end user is accessing |
| Remote | The software/hardware is being executed/stored on a machine separate from the end user |

# 2 - Overall Description

*Discuss the context of the software being developed. For example, is it an upgrade or a replacement of an existing product? Is it a new and complete system? Is it a prototype? Is it a component of a larger system or a library? A simple diagram showing how the software relates to other components will be helpful.*

## 2.1 - Product Features

*Summarise the significant features of the software in high-level. Section 1 prepares the reader, while Section 2 presents the software.*

## 2.2 System Requirements

*Discuss the minimum software and hardware requirements needed to deploy the software. Be careful not to state specifications beyond what is required. Also note that development and production requirements may be different.*

### 2.2.1 - Development Requirements

|  |  |
| --- | --- |
| **Requirement** | **Explanation** |
| Leap Motion Device | This device is what records the motion and sends the data to the computer |
| Leap Motion Driver | This software interfaces with the leap motion device and converts the binary into usable data |
| Leap Motion JSAPI | The Leap Motion JSAPI provides a javascript interface to the leap motion device. |
| Computer | The computer will perform the calculations required by the software |
| Local Web Server | This software will host the code for execution in a web browser |
| Web Browser (Chrome/Firefox/IE/Safari) | The web browser will run the software developed |
| IDE/Text Editor | The software will be developed in this software. |

### 2.2.2 – Production Requirements

|  |  |
| --- | --- |
| **Requirement** | **Explanation** |
| Leap Motion Device | This device is what records the motion and sends the data to the computer |
| Leap Motion Driver | This software interfaces with the leap motion device and converts the binary into usable data |
| Leap Motion JSAPI | The Leap Motion JSAPI provides a javascript interface to the leap motion device. The JSAPI will be included when the web page is loaded, therefore not required locally |
| Computer | The computer will perform the calculations required by the software |
| Web Browser (Chrome/Firefox/IE/Safari) | The web browser will run the software developed |

## 2.3 Documentation

*List all the documents that will be delivered along with the software. This may include user manuals, tutorials and technical manuals.*

# 3 System

*Describe using appropriate models the high architecture of software that will be developed. This section can be organized by function, module, object class, or in a logical way to break down your software.*

# 4 Interface Requirements

*Describe how the software communicates with other entities when it is executing. These may include (If any sub-sections below do not apply, the sub-section should state “The software has no <sub-section heading> interface requirements.*

## 4.1 User Interfaces

*Describe how the user will interact with the software. This may be sample GUI or a console user screen.*

## 4.2 Hardware Interfaces

*Discuss the hardware that the software will interface to. Describe how the software communicates, and/or controls the hardware. This may include the communication protocol used and interface requirement such as communication port.*

## 4.3 Software Interfaces

*Discuss the other software applications that the software will interface to. Other software applications may be database systems, and web servers. Complete information of the other software applications must be provided, such as name, version and source. Describe how the software interacts and/or communications with these other software.*

## 4.4 Communication Interfaces

*Discuss the communication interfaces that the software uses. These may be local area network communication, internet communication via HTTP/HTTPS or FTP/SFTP. If the communication is through another software application do not include it here.*

# 5 References:

*If you have got information from published sources, show where it came from. Put a superscripted number after the place in the report where the information is used, and list the details of the reference here.*

*1. Hamlyn-Harris, J H , “DEVELOPMENT OF A COMPARATIVE WEAR TEST FOR PVD COATED HELICAL ENDMILLS", Proc. "Materials Conservation, Materials Research Forum 1997, Centre for Advanced Materials Technology (CAMT), Monash University, Melbourne, 1997, pp. 49-52.*

*Don’t forget the page numbers. No-one want’s to read an entire book just to check one little fact.*