

# Software Requirements Specification for Software Engineering: Document Management System

Team 15, SyncMaster

Kyle D'Souza

Mitchell Hynes

Richard Fan

Akshit Gulia

Rafeed Iqbal

October 4, 2024

# Contents

<b>1</b>	<b>Purpose of the Project</b>	<b>vi</b>
1.1	User Business . . . . .	vi
1.2	Goals of the Project . . . . .	vi
<b>2</b>	<b>Stakeholders</b>	<b>vi</b>
2.1	Client . . . . .	vi
2.2	Customer . . . . .	vi
2.3	Other Stakeholders . . . . .	vi
2.4	Hands-On Users of the Project . . . . .	vi
2.5	Personas . . . . .	vi
2.6	Priorities Assigned to Users . . . . .	vi
2.7	User Participation . . . . .	vii
2.8	Maintenance Users and Service Technicians . . . . .	vii
<b>3</b>	<b>Mandated Constraints</b>	<b>vii</b>
3.1	Solution Constraints . . . . .	vii
3.2	Implementation Environment of the Current System . . . . .	vii
3.3	Partner or Collaborative Applications . . . . .	vii
3.4	Off-the-Shelf Software . . . . .	vii
3.5	Anticipated Workplace Environment . . . . .	vii
3.6	Schedule Constraints . . . . .	vii
3.7	Budget Constraints . . . . .	vii
3.8	Enterprise Constraints . . . . .	viii
<b>4</b>	<b>Naming Conventions and Terminology</b>	<b>viii</b>
4.1	Glossary of All Terms, Including Acronyms, Used by Stakeholders involved in the Project . . . . .	viii
<b>5</b>	<b>Relevant Facts And Assumptions</b>	<b>viii</b>
5.1	Relevant Facts . . . . .	viii
5.2	Business Rules . . . . .	viii
5.3	Assumptions . . . . .	viii
<b>6</b>	<b>The Scope of the Work</b>	<b>viii</b>
6.1	The Current Situation . . . . .	viii
6.2	The Context of the Work . . . . .	viii
6.3	Work Partitioning . . . . .	ix

6.4	Specifying a Business Use Case (BUC)	ix
<b>7</b>	<b>Business Data Model and Data Dictionary</b>	<b>ix</b>
7.1	Business Data Model	ix
7.2	Data Dictionary	ix
<b>8</b>	<b>The Scope of the Product</b>	<b>ix</b>
8.1	Product Boundary	ix
8.2	Product Use Case Table	ix
8.3	Individual Product Use Cases (PUC's)	ix
<b>9</b>	<b>Functional Requirements</b>	<b>ix</b>
9.1	Functional Requirements	ix
<b>10</b>	<b>Look and Feel Requirements</b>	<b>x</b>
10.1	Appearance Requirements	x
10.2	Style Requirements	x
<b>11</b>	<b>Usability and Humanity Requirements</b>	<b>x</b>
11.1	Ease of Use Requirements	x
11.2	Personalization and Internationalization Requirements	x
11.3	Learning Requirements	x
11.4	Understandability and Politeness Requirements	x
11.5	Accessibility Requirements	x
<b>12</b>	<b>Performance Requirements</b>	<b>x</b>
12.1	Speed and Latency Requirements	x
12.2	Safety-Critical Requirements	xi
12.3	Precision or Accuracy Requirements	xi
12.4	Robustness or Fault-Tolerance Requirements	xi
12.5	Capacity Requirements	xi
12.6	Scalability or Extensibility Requirements	xi
12.7	Longevity Requirements	xi
<b>13</b>	<b>Operational and Environmental Requirements</b>	<b>xi</b>
13.1	Expected Physical Environment	xi
13.2	Wider Environment Requirements	xi
13.3	Requirements for Interfacing with Adjacent Systems	xii
13.4	Productization Requirements	xii

13.5 Release Requirements . . . . .	xii
<b>14 Maintainability and Support Requirements</b>	<b>xii</b>
14.1 Maintenance Requirements . . . . .	xii
14.2 Supportability Requirements . . . . .	xiii
14.3 Adaptability Requirements . . . . .	xiii
<b>15 Security Requirements</b>	<b>xiii</b>
15.1 Access Requirements . . . . .	xiii
15.2 Integrity Requirements . . . . .	xiii
15.3 Privacy Requirements . . . . .	xiv
15.4 Audit Requirements . . . . .	xiv
15.5 Immunity Requirements . . . . .	xiv
<b>16 Cultural Requirements</b>	<b>xiv</b>
16.1 Cultural Requirements . . . . .	xiv
<b>17 Compliance Requirements</b>	<b>xiv</b>
17.1 Legal Requirements . . . . .	xiv
17.2 Standards Compliance Requirements . . . . .	xiv
<b>18 Open Issues</b>	<b>xiv</b>
<b>19 Off-the-Shelf Solutions</b>	<b>xiv</b>
19.1 Ready-Made Products . . . . .	xiv
19.2 Reusable Components . . . . .	xv
19.3 Products That Can Be Copied . . . . .	xv
<b>20 New Problems</b>	<b>xv</b>
20.1 Effects on the Current Environment . . . . .	xv
20.2 Effects on the Installed Systems . . . . .	xv
20.3 Potential User Problems . . . . .	xv
20.4 Limitations in the Anticipated Implementation Environment That May Inhibit the New Product . . . . .	xv
20.5 Follow-Up Problems . . . . .	xv
<b>21 Tasks</b>	<b>xv</b>
21.1 Project Planning . . . . .	xv
21.2 Planning of the Development Phases . . . . .	xvi

<b>22 Migration to the New Product</b>	<b>xvi</b>
22.1 Requirements for Migration to the New Product . . . . .	xvi
22.2 Data That Has to be Modified or Translated for the New System	xvi
<b>23 Costs</b>	<b>xvi</b>
<b>24 User Documentation and Training</b>	<b>xvi</b>
24.1 User Documentation Requirements . . . . .	xvi
24.2 Training Requirements . . . . .	xvi
<b>25 Waiting Room</b>	<b>xvi</b>
<b>26 Ideas for Solution</b>	<b>xvi</b>

## Revision History

Date	Version	Notes
Date 1	1.0	Notes
Date 2	1.1	Notes

# **1 Purpose of the Project**

## **1.1 User Business**

*Insert your content here.*

## **1.2 Goals of the Project**

*Insert your content here.*

# **2 Stakeholders**

## **2.1 Client**

*Insert your content here.*

## **2.2 Customer**

*Insert your content here.*

## **2.3 Other Stakeholders**

*Insert your content here.*

## **2.4 Hands-On Users of the Project**

*Insert your content here.*

## **2.5 Personas**

*Insert your content here.*

## **2.6 Priorities Assigned to Users**

*Insert your content here.*

## **2.7 User Participation**

*Insert your content here.*

## **2.8 Maintenance Users and Service Technicians**

*Insert your content here.*

# **3 Mandated Constraints**

## **3.1 Solution Constraints**

*Insert your content here.*

## **3.2 Implementation Environment of the Current System**

*Insert your content here.*

## **3.3 Partner or Collaborative Applications**

*Insert your content here.*

## **3.4 Off-the-Shelf Software**

*Insert your content here.*

## **3.5 Anticipated Workplace Environment**

*Insert your content here.*

## **3.6 Schedule Constraints**

*Insert your content here.*

## **3.7 Budget Constraints**

*Insert your content here.*



### **3.8 Enterprise Constraints**

*Insert your content here.*

## **4 Naming Conventions and Terminology**

### **4.1 Glossary of All Terms, Including Acronyms, Used by Stakeholders involved in the Project**

*Insert your content here.*

## **5 Relevant Facts And Assumptions**

### **5.1 Relevant Facts**

*Insert your content here.*

### **5.2 Business Rules**

*Insert your content here.*

### **5.3 Assumptions**

*Insert your content here.*

## **6 The Scope of the Work**

### **6.1 The Current Situation**

*Insert your content here.*

### **6.2 The Context of the Work**

*Insert your content here.*

## **6.3 Work Partitioning**

*Insert your content here.*

## **6.4 Specifying a Business Use Case (BUC)**

*Insert your content here.*

# **7 Business Data Model and Data Dictionary**

## **7.1 Business Data Model**

*Insert your content here.*

## **7.2 Data Dictionary**

*Insert your content here.*

# **8 The Scope of the Product**

## **8.1 Product Boundary**

*Insert your content here.*

## **8.2 Product Use Case Table**

*Insert your content here.*

## **8.3 Individual Product Use Cases (PUC's)**

*Insert your content here.*

# **9 Functional Requirements**

## **9.1 Functional Requirements**

*Insert your content here.*

## **10 Look and Feel Requirements**

### **10.1 Appearance Requirements**

*Insert your content here.*

### **10.2 Style Requirements**

*Insert your content here.*

## **11 Usability and Humanity Requirements**

### **11.1 Ease of Use Requirements**

*Insert your content here.*

### **11.2 Personalization and Internationalization Requirements**

*Insert your content here.*

### **11.3 Learning Requirements**

*Insert your content here.*

### **11.4 Understandability and Politeness Requirements**

*Insert your content here.*

### **11.5 Accessibility Requirements**

*Insert your content here.*

## **12 Performance Requirements**

### **12.1 Speed and Latency Requirements**

*Insert your content here.*

## **12.2 Safety-Critical Requirements**

*Insert your content here.*

## **12.3 Precision or Accuracy Requirements**

*Insert your content here.*

## **12.4 Robustness or Fault-Tolerance Requirements**

*Insert your content here.*

## **12.5 Capacity Requirements**

*Insert your content here.*

## **12.6 Scalability or Extensibility Requirements**

*Insert your content here.*

## **12.7 Longevity Requirements**

*Insert your content here.*

# **13 Operational and Environmental Requirements**

## **13.1 Expected Physical Environment**

OE-PE1. Application should be functional in City of Hamilton, Water Division sites and offices.

## **13.2 Wider Environment Requirements**

OE-WE1. Application should be functional on Mobile and Desktop web browser environments.

OE-WE2. Application should be able to run on any device with a modern web browser.

### **13.3 Requirements for Interfacing with Adjacent Systems**

OE-IAS1. Application should integrate with existing SharePoint repositories.

### **13.4 Productization Requirements**

N/A

### **13.5 Release Requirements**

OE-REL1. A change-log should be generated with every release documenting changes in features and requirements.

OE-REL2. Expected release of Revision 0: February 1st, 2024

OE-REL3. Expected release of Revision 1: March 30th, 2025

## **14 Maintainability and Support Requirements**

### **14.1 Maintenance Requirements**

MS-MTN1. A deployment of the system should take no more than 30 minutes (not including testing, and building time).

MS-MTN2. The build time of the system should be no longer than 10 minutes (not including testing time).

MS-MTN3. All automated tests should be able to run in under 10 minutes

MS-MTN4. The system should have rigorous unit testing, line coverage should be  $\geq 95\%$ , branch coverage should be  $\geq 90\%$ .

MS-MTN5. All core functionalities of the system (i.e. Functional Requirements), should have both automated end-to-end and unit testing corresponding to them

MS-MTN6. The project must be able to be maintained by its users, as original developers will not be maintaining it after April 2, 2025.

## **14.2 Supportability Requirements**

MS-SUP1. The application should have user-facing documentation on how to use the core functionalities of the system (i.e. functionalities described in functional requirements).

MS-SUP2. The application should have documentation for all API's for future maintainers.

MS-SUP3. The application should have documentation of internal functions and abstractions for future maintainers.

MS-SUP4. The application should have documentation on deployment, so users can deploy this application for themselves.

## **14.3 Adaptability Requirements**

MS-ADP1. The application must be able to run on at least Google Chrome and Microsoft Edge browsers.

MS-ADP2. The application must be able to run on tablets, smartphones, and laptops.

MS-ADP3. The application must be able to run on Android, IOS, and Windows 10

# **15 Security Requirements**

## **15.1 Access Requirements**

*Insert your content here.*

## **15.2 Integrity Requirements**

*Insert your content here.*

### **15.3 Privacy Requirements**

*Insert your content here.*

### **15.4 Audit Requirements**

*Insert your content here.*

### **15.5 Immunity Requirements**

*Insert your content here.*

## **16 Cultural Requirements**

### **16.1 Cultural Requirements**

*Insert your content here.*

## **17 Compliance Requirements**

### **17.1 Legal Requirements**

*Insert your content here.*

### **17.2 Standards Compliance Requirements**

*Insert your content here.*

## **18 Open Issues**

*Insert your content here.*

## **19 Off-the-Shelf Solutions**

### **19.1 Ready-Made Products**

*Insert your content here.*

## **19.2 Reusable Components**

*Insert your content here.*

## **19.3 Products That Can Be Copied**

*Insert your content here.*

# **20 New Problems**

## **20.1 Effects on the Current Environment**

*Insert your content here.*

## **20.2 Effects on the Installed Systems**

*Insert your content here.*

## **20.3 Potential User Problems**

*Insert your content here.*

## **20.4 Limitations in the Anticipated Implementation Environment That May Inhibit the New Product**

*Insert your content here.*

## **20.5 Follow-Up Problems**

*Insert your content here.*

# **21 Tasks**

## **21.1 Project Planning**

*Insert your content here.*



## **21.2 Planning of the Development Phases**

*Insert your content here.*

## **22 Migration to the New Product**

### **22.1 Requirements for Migration to the New Product**

*Insert your content here.*

### **22.2 Data That Has to be Modified or Translated for the New System**

*Insert your content here.*

## **23 Costs**

*Insert your content here.*

## **24 User Documentation and Training**

### **24.1 User Documentation Requirements**

*Insert your content here.*

### **24.2 Training Requirements**

*Insert your content here.*

## **25 Waiting Room**

*Insert your content here.*

## **26 Ideas for Solution**

*Insert your content here.*

## Appendix — Reflection

The information in this section will be used to evaluate the team members on the graduate attribute of Lifelong Learning. Please answer the following questions:

1. What knowledge and skills will the team collectively need to acquire to successfully complete this capstone project? Examples of possible knowledge to acquire include domain specific knowledge from the domain of your application, or software engineering knowledge, mechatronics knowledge or computer science knowledge. Skills may be related to technology, or writing, or presentation, or team management, etc. You should look to identify at least one item for each team member.
2. For each of the knowledge areas and skills identified in the previous question, what are at least two approaches to acquiring the knowledge or mastering the skill? Of the identified approaches, which will each team member pursue, and why did they make this choice?