

Project Title: System Verification and Validation Plan for LiDart

Team 10

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1 Revision History

Date	Version	Notes
Date 1	1.0	Notes
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Contents

1	Revision History	i
2	Symbols, Abbreviations and Acronyms	iv
3	General Information	1
3.1	Summary	1
3.2	Objectives	1
3.3	Relevant Documentation	1
4	Plan	1
4.1	Verification and Validation Team	1
4.2	SRS Verification Plan	1
4.3	Design Verification Plan	1
4.4	Verification and Validation Plan Verification Plan	1
4.5	Implementation Verification Plan	1
4.6	Automated Testing and Verification Tools	1
4.7	Software Validation Plan	1
5	System Test Description	1
5.1	Tests for Functional Requirements	1
5.1.1	Area of Testing1	1
5.1.2	Area of Testing2	2
5.2	Tests for Nonfunctional Requirements	2
5.2.1	Area of Testing1	2
5.2.2	Area of Testing2	3
5.3	Traceability Between Test Cases and Requirements	3
6	Unit Test Description	3
6.1	Unit Testing Scope	3
6.2	Tests for Functional Requirements	3
6.2.1	Module 1	3
6.2.2	Module 2	4
6.3	Tests for Nonfunctional Requirements	4
6.3.1	Module ?	4
6.3.2	Module ?	4
6.4	Traceability Between Test Cases and Modules	5

7	Appendix	6
7.1	Symbolic Parameters	6
7.2	Usability Survey Questions?	6

List of Tables

List of Figures

2 Symbols, Abbreviations and Acronyms

symbol	description
T	Test

This document ...

3 General Information

3.1 Summary

3.2 Objectives

3.3 Relevant Documentation

[Author](#) (2019)

4 Plan

4.1 Verification and Validation Team

4.2 SRS Verification Plan

4.3 Design Verification Plan

4.4 Verification and Validation Plan Verification Plan

4.5 Implementation Verification Plan

4.6 Automated Testing and Verification Tools

4.7 Software Validation Plan

5 System Test Description

5.1 Tests for Functional Requirements

5.1.1 Area of Testing1

Title for Test

1. test-id1

Control: Manual versus Automatic

Initial State:

Input:

Output:

Test Case Derivation:

How test will be performed:

2. test-id2

Control: Manual versus Automatic

Initial State:

Input:

Output:

Test Case Derivation:

How test will be performed:

5.1.2 Area of Testing2

...

5.2 Tests for Nonfunctional Requirements

5.2.1 Area of Testing1

Title for Test

1. test-id1

Type: Functional, Dynamic, Manual, Static etc.

Initial State:

Input/Condition:

Output/Result:

How test will be performed:

2. test-id2

Type: Functional, Dynamic, Manual, Static etc.

Initial State:

Input:

Output:

How test will be performed:

5.2.2 Area of Testing2

...

5.3 Traceability Between Test Cases and Requirements

6 Unit Test Description

6.1 Unit Testing Scope

6.2 Tests for Functional Requirements

6.2.1 Module 1

1. test-id1

Type:

Initial State:

Input:

Output:

Test Case Derivation:

How test will be performed:

2. test-id2

Type:

Initial State:

Input:

Output:

Test Case Derivation:

How test will be performed:

3. ...

6.2.2 Module 2

...

6.3 Tests for Nonfunctional Requirements

6.3.1 Module ?

1. test-id1

Type:

Initial State:

Input/Condition:

Output/Result:

How test will be performed:

2. test-id2

Type: Functional, Dynamic, Manual, Static etc.

Initial State:

Input:

Output:

How test will be performed:

6.3.2 Module ?

...

6.4 Traceability Between Test Cases and Modules

References

Author Author. System requirements specification. <https://github.com/...>, 2019.

7 Appendix

This is where you can place additional information.

7.1 Symbolic Parameters

The definition of the test cases will call for SYMBOLIC_CONSTANTS. Their values are defined in this section for easy maintenance.

7.2 Usability Survey Questions?

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:

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 the verification and validation of your project? Examples of possible knowledge and skills include dynamic testing knowledge, static testing knowledge, specific tool usage etc. You should look to identify at least one item for each team member.
2. There are a number of skills that will be needed for the verification and validation of the project. This includes creation of testing plans, accurately measuring distance to verify localization, precision phone movement,
3. 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?
4. Michaela will pursue the creation of the testing plans as she has the most experience with designing a comprehensive set of tests that will cover all possible options. She will obtain knowledge from reviewing previous projects and researching existing tests of similar robots.
5. Jonathan will pursue the testing of the software as he would know the software's function and potential issues. He will execute Michaela's plan and obtain knowledge in the areas of software testing from on-line resources, and from the development of the code and its potential problems.
6. Neeraj will pursue the testing of the mechanical aspects of the robot as during his construction of the parts, will gain a sense of the required trials. He will obtain knowledge from mechanical engineering textbooks as well as online from researching existing robotic mechanical malfunctioning.

7. Kareem will pursue the testing of the electrical system as it pertains to his knowledge around the electrical engineering in this project. Kareem will be validating the electrical system against common faults and will expose it to a variety of conditions. He will obtain the knowledge required by investigating online sources and contacting professors at McMaster for guidance on robot electrical issues.