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FACULTY OF ENGINEERING
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Test Plan, Test Design Specifications and Test Cases
Version 1

CENG 408
Innovative System Design and Development II

***Human Interface Device
3D Pointer***

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1. INTRODUCTION

1.1 Version Control

Version No	Description of Changes	Date
1.0	First Version	April 22, 2019
2.0	Second Version	May 17, 2019

1.2 Overview

System features, the use case of Human Interface Device (HID): 3D Pointer is planned to be tested. Requirements and functions had been determined in SRS and SDD documents before.

1.3 Scope

This document includes new to all the functions of a specific product, its existing interfaces, integration of all functions.

1.4 Terminology

Acronym	Definition
UI	User Interface
GUI	Graphical User Interface
GF	General Features

2. FEATURES TO BE TESTED

This section lists and gives a brief description of all the major features to be tested. Human Interface Device: 3D Pointer has three main part: Pre-Production Mode, Production Mode and Post Production mode. In this section Graphical User Interface of Human Interface Device features will be discussed for testing.

2.1 GUI (Graphical User Interface)

Graphical user interface contains port name combo box and connection button. There are three main part of user interface: There are text fields, data fields, combo box, button and tables according to features of pages. Users who want to use the system must first start the system. The menu is very simple. There is a port selection and connect button. The user must establish the connection by selecting the port he / she wants to use. When the Connect Button is clicked, the system is activated directly.

2.2 GF (General Features)

In this field, user-independent systematic data is required for proper operation of the system.

3. ITEM PASS/FAIL CRITERIA

Describe the general rule to use to decide when a test case passes and when it fails.

3.1 Exit Criteria

Describe under what conditions the testing of the product is considered successful. Some examples are:

- 100% of the test cases are executed
- 95% of the test cases passed
- All High and Medium Priority test cases passed

4. REFERENCES

- [1] CankayaUniversity, “CankayaUniversity/ceng-407-408-project-megareji,” GitHub. [Online]. Available: [https://github.com/CankayaUniversity/ceng-407-408-Human-Interface-Device-3D-pointer/wiki/Software-Requirement-Specification-\(SRS\)](https://github.com/CankayaUniversity/ceng-407-408-Human-Interface-Device-3D-pointer/wiki/Software-Requirement-Specification-(SRS)). [Accessed: 23-Oct-2018].
- [2] CankayaUniversity, “CankayaUniversity/ceng-407-408-Human-Interface-Device-3D-pointer” GitHub. [Online]. Available: [https://github.com/CankayaUniversity/ceng-407-408-Human-Interface-Device-3D-pointer/wiki/Software-Design-Document-\(SDD\)](https://github.com/CankayaUniversity/ceng-407-408-Human-Interface-Device-3D-pointer/wiki/Software-Design-Document-(SDD)). [Accessed: 23-Oct-2018].

5. TEST DESIGN SPECIFICATIONS

5.1 GUI (Graphical User Interface)

5.1.1 Subfeatures to be tested

5.1.1.1 Port Name Combo Box (GUI.PN.CB)

Users need to select the correct port from the drop down list in order to run the system and start viewing.

5.1.1.2 Connection Button (GUI.CONN.BTN)

Once the matching port is found, the connection between the sensors and the system is established by clicking the connect button.

5.1.2 Test Cases

Here list all the related test cases for this feature

TC ID	Requirements	Priority	Scenario Description
	<i>Give corresponding requirement no</i>	<i>High or Medium or Low</i>	<i>A brief description</i>
GUI.PN.CB	5.1.1.1	H	Select the correct port from the drop down list.
GUI.CONN.BTN	5.1.1.2	L	Click connect button and run.

5.2 General Features

5.2.1 Subfeatures to be tested

5.2.1.1 Operation of Ultrasonic Sensors (GF.OP.US)

By operating the system, each of the ultrasonic sensors must operate and give accurate measurement results.

5.2.1.2 Movement Speed (GF.MOV.SP)

The sensors must be fast enough to measure the motion smoothly.

5.2.1.3 Sensor Stabilization (GF.SS)

Each sensor must be able to provide a fixed position for a clear view.

5.2.1.4 Connection Compatibility (GF.CC)

Each sensor must be in harmony with each other. The result is accurate as a result of the simultaneous operation of all three sensors.

5.2.2 Test Cases

Here list all the related test cases for this feature

TC ID	Requirements	Priority	Scenario Description
GF.OP.US	5.2.1.1	H	Ultrasonic sensors must operate and give accurate measurement results.
GF.MOV.SP	5.2.1.2	M	The sensors must be fast enough to measure the motion smoothly.
GF.SS	5.2.1.3	M	Each sensor provide a fixed position.
GF.CC	5.2.1.4	M	Each sensor must be in harmony with each other.

6. Detailed Test Cases

6.1 GUI.PN.CB

TC_ID	GUI.PN.CB
Purpose	Select the correct port from the drop down list.
Requirements	5.1.1.1
Priority	High
Estimated Time Needed	10 Seconds
Dependency	Run the program.
Setup	An admin user should be created.
Procedure	[A01] Run the main program.
	[A02] Click on combo box.
	[A03] Select port.
	[V01] Port name to be used appears.
	-
Cleanup	Exit

6.2 GUI.CONN.BTN

TC_ID	GUI.CONN.BTN
Purpose	Click connect button and run.
Requirements	5.1.1.2
Priority	Low
Estimated Time Needed	10 Seconds
Dependency	Run the program.
Setup	An admin user should be created.
Procedure	[A01] Run the main program.
	[A02] Click on combo box.
	[A03] Select required port.
	[A04] Click on the “Connect” button.
	[V01] The necessary connection is provided and the 3D view is reflected on the screen.
	-
Cleanup	Exit

6.3 GF.OP.US

TC_ID	GF.OP.US
Purpose	Ultrasonic sensors must operate and give accurate measurement results.
Requirements	5.2.1.1
Priority	High.
Estimated Time Needed	5 Minutes
Dependency	Run the program and connect.
Setup	An admin user should be created.
Procedure	[A01] Run the program on Arduino.
	[A02] Move the object.
	[A03] Check for accuracy for location.
	[V01] Positioning data is displayed correctly.
	-
Cleanup	Exit

6.4 GF.MOV.SP

TC_ID	GF.MOV.SP
Purpose	The sensors must be fast enough to measure the motion smoothly.
Requirements	5.2.1.2
Priority	Medium.
Estimated Time Needed	5 Minutes
Dependency	Run the program and connect.
Setup	An admin user should be created.
Procedure	[A01] Run the program on Arduino.
	[A02] Move the object at various speeds.
	[A03] Check for accuracy for speeds.
	[V01] The object movement is displayed properly when the speed increases.
	-
Cleanup	Exit

6.5 GF.SS

TC_ID	GF.SS
Purpose	Each sensor provide a fixed position.
Requirements	5.2.1.3
Priority	Medium.
Estimated Time Needed	5 Minutes
Dependency	Run the program and connect.
Setup	An admin user should be created.
Procedure	[A01] Run the main program.
	[A02] Control the transferred data.
	[V01] 3D view of object in which position appears fixes that position.
	-
Cleanup	Exit

6.6 GF.CC

TC_ID	GF.CC
Purpose	Each sensor must be in harmony with each other.
Requirements	5.2.1.4
Priority	Medium.
Estimated Time Needed	5 Minutes
Dependency	Add User test cases should pass
Setup	An admin user should be created.
Procedure	[A01] Run the program on Arduino.
	[A02] Control the transferred data.
	[A03] Enter the valid password for this user
	[V01] All three sensors operate at the same time and send accurate location information.
	-
Cleanup	Exit