

# Verification and Validation Report: Mechatronics Engineering

Team #1, Back End Developers

Jessica Bae

Oliver Foote

Jonathan Hai

Anish Rangarajan

Nish Shah

Labeeb Zaker

March 2, 2023

# 1 Revision History

Date	Version	Notes
Date 1	1.0	Notes
Date 2	1.1	Notes

## 2 Symbols, Abbreviations and Acronyms

symbol	description
T	Test

[symbols, abbreviations or acronyms – you can reference the SRS tables if needed  
—SS]

# Contents

<b>1</b>	<b>Revision History</b>	<b>i</b>
<b>2</b>	<b>Symbols, Abbreviations and Acronyms</b>	<b>ii</b>
<b>3</b>	<b>Functional Requirements Evaluation</b>	<b>1</b>
<b>4</b>	<b>Nonfunctional Requirements Evaluation</b>	<b>1</b>
4.1	Usability . . . . .	1
4.2	Performance . . . . .	1
4.3	etc. . . . .	1
<b>5</b>	<b>Comparison to Existing Implementation</b>	<b>1</b>
<b>6</b>	<b>Unit Testing</b>	<b>1</b>
<b>7</b>	<b>Changes Due to Testing</b>	<b>1</b>
<b>8</b>	<b>Automated Testing</b>	<b>1</b>
<b>9</b>	<b>Trace to Requirements</b>	<b>2</b>
<b>10</b>	<b>Trace to Modules</b>	<b>2</b>
<b>11</b>	<b>Code Coverage Metrics</b>	<b>2</b>

## List of Tables

## List of Figures

This document ...

### 3 Functional Requirements Evaluation

### 4 Nonfunctional Requirements Evaluation

#### 4.1 Usability

#### 4.2 Performance

#### 4.3 etc.

### 5 Comparison to Existing Implementation

Current motion detecting smart watches, such as Apple watches or Samsung Galaxy watches, are desgined for healthy and active population. The EMAnator is specifically geared towards older adults who have chronical back pain. Therefore, it is desgined to capture minor and subtle movements accurately.

### 6 Unit Testing

1	Void bed_HR_setup()	Set-up function for heartrate module	RQ	User heart rate input from A0 s
2	name	desc	ref	input
3	name	desc	ref	input

### 7 Changes Due to Testing

After testing out each unit of the device system and failing unit test #2, the type of heartrate sensor has been changed. Now the ... (list out all the potential candidates that were ruled out).

### 8 Automated Testing

N/A

- 9 Trace to Requirements**
- 10 Trace to Modules**
- 11 Code Coverage Metrics**

## Appendix — Reflection

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

1. In what ways was the Verification and Validation (VnV) Plan different from the activities that were actually conducted for VnV? If there were differences, what changes required the modification in the plan? Why did these changes occur? Would you be able to anticipate these changes in future projects? If there weren't any differences, how was your team able to clearly predict a feasible amount of effort and the right tasks needed to build the evidence that demonstrates the required quality? (It is expected that most teams will have had to deviate from their original VnV Plan.)