UAT Plan
for
Prosthetic arm

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Scope
1.1.   Objectives and business requirements

The goal of this user acceptance test is to test all the features of the prosthetic arm and to make sure that all of its features work as expected. This device is hoping to assist the patient Aaron in his daily tasks as well as helping him regain his ability to rock climb.

We will measure success by seeing how well all of the features work properly and as intended.

1.2.   Scope

The Prosthetic arm is specifically designed for the patient Aaron so the device is intended to allow Aaron to use it as a fully functioning hand, allowing him to do day-to-day activities and making his life easier

For this UAT test, we'd like to:
- Make sure that the EMG sensor works and the hand can open and close
- Verify that all the features work as intended
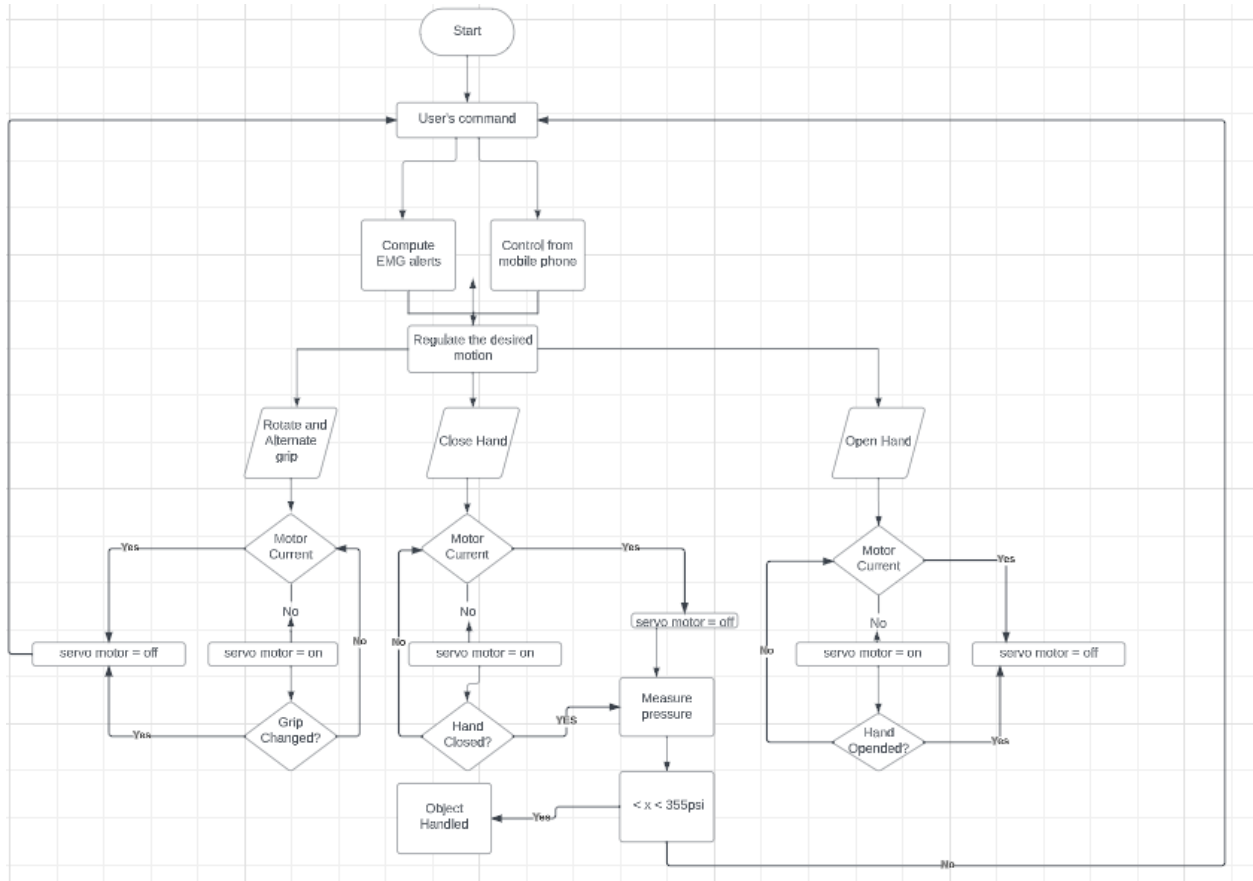- Get feedback on the effectiveness of the prosthetic arm

For this UAT test, we are not testing
- The battery life
- Accuracy of pressure sensors

1.3.   System Diagrams

Logic Flow Chart:
The flow chart describes the flow of logic for the prosthetic arm. It showcases the fundamental code that will be run by the device.

Start

User's command

Compute EMG alerts

Control from mobile phone

Regulate the desired motion

Rotate and Alternate grip

Close Hand

Open Hand

Motor Current

Motor Current

Motor Current

Yes

Yes

Yes

No

No

No

No

No

servo motor = off

servo motor = on

servo motor = on

servo motor = off

servo motor = on

servo motor = off

Grip Changed?

Hand Closed?

Hand Opended?

Measure pressure

Yes

Yes

Yes

< x < 355psi

Object Handled

Yes

No

Testing team

Name	Responsibilities
Jaquan Hira	UAT Coordinator
Asya Madhuri	Design test cases
Melchior Anzhela	Design test cases
Norma Adalbern	Create test data and write UAT reports
Ajeet Evgeni	Sets up staging and usability test cases and reports
León Adilet	Tester
Berk Drago	Tester
Jørn Melaina	Tester

Environmental requirements

1.4. Hardware requirements

The device is designed to be attached to the patient's arm and the minimum requirements for the phone is

Google Pixel 5 - Mobile Phone

> *Android 11.*
> *Qualcomm SM7250 Snapdragon.*
> *1080 x 2340 pixels, 19.5:9 ratio.*
> *4g NIC*

Test Scripts

Test	Describe the feature being tested	Describe the user input or test data	Describe the pass criteria	
1.1	Emg sensor to control hand	1. The user inserts needle into the target muscle 2. Use muscles to control hand	1. Electrodes detect muscle activation 2. The hand opens and closes when the muscle is activated	Tester name: ☐ PASS ☐ FAIL Observations:
1.2	Phone app to control hand	1. The user uses the phone app to open and close the hand 2. The user also changes hand position e.g. rotating at the wrist	The robotic hand responds appropriately to commands	Tester name: ☐ PASS ☐ FAIL Observations:
1.3	Pressure sensor to monitor max load	1. Pick up something with the robotic hand	if the pressuret is more than 355 psi it doesn't lift it up	Tester name: ☐ PASS ☐ FAIL Observations:

Write step-by-step, detailed but concise instructions on how to test the feature.