Product Requirements Document
Animation Control System with Microcontroller - Draft Version

Group 12

Student's ID	Name
2151163	Ngô Ngọc Đại Việt
2151078	Nguyễn Quang Huân
2151190	Vũ Minh Đức

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Overview

Internal Name	Animation Control System with Microcontroller
External Name	ACSM
Launch Target	Q1 2024

The Animation Control System with Microcontroller brings forth a dynamic interface for orchestrating animations through an OLED Display and the BNO085 IMU. This system enables users to program and govern captivating animations, harnessing the potential of the embedded microcontroller.

This resource caters to electronics enthusiasts, hobbyists, and developers keen on crafting interactive animations and motion-controlled projects utilizing a Microcontroller, OLED Display, and BNO085 IMU.

Priority Description

P0: Must Have Requirement i.e. Product will not launch without it
P1: Not a requirement for launch but is needed 3-6 months post-launch

Product Requirements

I. Industrial Design

#	Feature/Characteristic	Product Requirements	Priority	Technical/Engineering Specifications	Comments
I.1	Visual Interface	Shall have an OLED display	P0		
I.2	Connectors	Shall have a USB-C port	P0		

II. Display Screen

#	Feature/Characteristic	Product Requirements	Priority	Technical/Engineering Specifications	Comments
II.1	Always On	The display shall always show: - A Cat	P0		
II.3	Display Controls	The behavior of the cat will be based on the rotation angle of the IMU	P0		
II.4	Orientation	The display will support both portrait and landscape orientations, with the roll, pitch, and yaw angles limited to the range of [-90, 90].	P1		

III. Power

#	Feature/Characteristic	Product Requirements	Priority	Technical/Engineering Specifications	Comments
III.1	Power	Using 5V charger for stm32 and output 5V in stm32 will be the power supply for all system	P0		

IV. Durability

#	Feature/Characteristic	Product Requirements	Priority	Technical/Engineering Specifications	Comments
IV.1	Humidity	Shall be fully functional and operational under 100% humidity	P0		
IV.3	Drop Test	Shall survive and be operational when dropped from at least 3 feet height	P0		
IV.4	Operating Temperature Range	Shall be fully functional and operational within the range of 32°F (0°C) to 120°F (49°C)	P0		
IV.6	Lifetime	Shall last for at least 10 years	P0		