Robotic Sorting System

Pace Dominy

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**Interface Control Document**

**Conveyor Belt**

REVISION – Draft

3 October 2022

Interface Control Document

for

Robotic Sorting System (Conveyor Belt)

Prepared by:

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Pace Dominy 10/3/2022

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# Overview

The Interface Control Document for the Conveyor Belt Subsystem will detail the physical, electrical and communication interfaces of this subsystem in detail. The Conveyor Belt Subsystem consists of the frame, the conveyor belt and the motor that turns the belt. Control signals will come from the Raspberry Pi and power will come from the Power Subsystem.

# References and Definitions

Provide any references (i.e., standards documents) and definitions. Examples are shown below.

## References

| **Document Number** | **Revision/Release Date** | **Document Title** |
| --- | --- | --- |
| ANSI/NFPA 70 | 2023 | National Electric Code |
| RSS FSR | 1.0/3 October 2022 | Robotic Sorting System Functional System Requirements |
| RSS Conveyor Belt FSR | 1.0/3 October 2022 | Conveyor Belt Functional System Requirements |

## Definitions

CCA Circuit Card Assembly

mA Milliamp

mW Milliwatt

MHz Megahertz (1,000,000 Hz)

TBD To Be Determined

TTL Transistor-Transistor Logic

VME VERSA-Module Europe

# Physical Interface

## Weight

Conveyor Belt Subsystem will weigh no more than 100 lbs in accordance with RSS ICD section 3.1.1.

## Dimensions

The Conveyor Belt Subsystem shall be no wider than 2.5 ft, no taller than 3 ft and no longer than 6 ft.

## Mounting Locations

### Motor

The conveyor belt motor will be connected to one of the rollers and will be mounted to the side of the frame.

### Robotic Lever Subsystem

The Robotic Lever/Guidance Subsystem will be mounted to the frame of the Conveyor Belt and will be just above the conveyor belt but not touching the belt as to not interfere with its movement.

# Thermal Interface

The Conveyor Belt Subsystem does not require any sort of thermal interface.

# Electrical Interface

## Primary Input Power

Power delivery will come from the Power Subsystem as specified in the Power Subsystem ICD.

# Communications

## Device Peripheral Interface

Controller signal inputs will come from the Raspberry Pi and go through the PCB. Protocol will be specified as necessary in the Power Subsystem ICD.