DEEP LEARNING FOR HYDROPONIC SOYBEAN GROWTH

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**Interface Control Document**

REVISION – Draft

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Interface Control Document

for

Deep Learning for Hydroponic Soybean Growth

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# Overview

The Deep learning software for hydroponic soybean growth will be utilized within any situation requiring the user to identify lab-grown soybeans. The model will be trained with image data provided by the agricultural department, and thus will be used in similar situations in which the model identifies the stage of growth and solution in which the soybean is grown. For scale purposes, this will only be used with soybeans grown hydroponically in labs, and not any soybean plant in any condition.

# References and Definitions

## References

**IEEE P3123**

**Standard for Artificial Intelligence and Machine Learning (AI/ML) Terminology and Data Formats**

9 Nov 2021

## Definitions

AI Artificial Intelligence

AFD Application Failure Detection

ML Machine Learning

MFD Model Failure Detection

N/A Not Applicable

UI User Interface

TBD To Be Determined

# Physical Interface

## Weight

N/A as project is entirely software.

## Dimensions

N/A as project is entirely software.

## Mounting Locations

N/A as project is entirely software.

# Thermal Interface

N/A as project is entirely software.

# Electrical Interface

There will only be one aspect of Electrical Interface, which is a user interface. This is described below in the corresponding section.

## Primary Input Power

N/A as project is entirely software.

## Polarity Reversal

N/A as project is entirely software.

## Signal Interfaces

N/A as project is entirely software.

## Video Interfaces

N/A as project is entirely software.

## User Control Interface

The user control interface will allow the user to upload multiple images at a time and run the deep-learning model we provide on that image. The interface will then give the user some sort of feedback on both the processing of the images, as well as the outputs of the images once the model is finished processing them.

# Communications / Device Interface Protocols

## Wireless Communications (WiFi)

N/A as project is entirely software.

## Host Device

User interface will require a device to run the website.

## Video Interface

N/A as project is entirely software.

## Device Peripheral Interface

N/A as project is entirely software.