Basic Details of the Team and Problem Statement

Ministry/Organization Name/Student Innovation: Ministry of Consumer Affairs

PS Code: VM742

Problem Statement Title: Smart Buffer Stock Solution

Team Name: Electriculture

Team Leader Name: Deepak Hadkar

Institute Code (AISHE): C-33584

Institute Name: K J Somaiya College of Engineering

Theme Name: Agriculture, FoodTech & Rural Development

Idea/Approach Details

Describe your idea/Solution/Prototype here:

➢ Designing a smart silo which will stock and maintain onions at a desire temperature.

➢ Alerting on detection of the gases emitted by rotten onions.

➢ For easy shuffling of the onions, screw conveyor has been implied in the system.

➢ A mobile application is designed for data acquisition.

Describe your Technology stack here:

Hardware:
➢ Microcontroller - ESP32 Board
➢ Gas Sensor - MQ135
➢ Temperature Sensor – DHT22
➢ Load Cell
➢ BLDC Fans
➢ SMPS

Software:
➢ Programming – Arduino-IDE
➢ PCB designing – Easy-EDA
➢ App development – MIT App Inventor

Idea/Approach Details

Describe your Use Cases here

> ➢ Improper storage condition resolving case
>
> ➢ To hold buffer stock, compensating price hike in monsoon.
>
> ➢ Automated storage environment
>
> ➢ Shuffling onions at fixed durations to maintain the stock hygiene.
>
> ➢ Long Term Storage Facility

Describe your Dependencies / Show stopper here

> ➢ High running business model which would enable B2B as well as P2P business issues
>
> ➢ IOT features which would enable cloud data monitoring
>
> ➢ And further enabling analytics to improve profit
>
> ➢ Utilization of light-weight material for outer-frame.

Team Member Details

Team Leader Name: Deepak Hadkar

| BTech | ETRX | III |

Team Member 1 Name: Manas Pange

| BTech | ETRX | IV |

Team Member 2 Name: Aksharan Ganeshan

| BTech | ETRX | IV |

Team Member 3 Name: Vedant Kelkar

| BTech | ETRX | III |

Team Member 4 Name: Divyesh Mehta

| BTech | ETRX | III |

Team Member 5 Name: Aditi Holey

| BTech | ETRX | II |

Team Mentor 1 Name: Kirti Sawlani

| Academic | Embedded Systems | Domain Experience (in years): 10 |