**MITSUBISHI ELECTRIC CUP 2020**

**TEAM MIRAI**

**AUTONOMOUS WAREHOUSE MANAGEMENT BOT**

We have been selected for the MITSUBISHI ELECTRIC CUP National Level Automation Competition. The project is "AUTONOMOUS WAREHOUSE MANAGEMENT BOT". It is industrial bot that is used to integrate the various functions within an industry and perform multiple tasks. The bot has features that ease the operations within an industry and utilizes the idle time. The same bot can work in the production as well as take care of the warehouse. It is able to manage the production rates and connect with customer demands. We are using Internet of Things for path detection and connecting to the data in cloud.

The basic requirements of an industry and other necessary details have been studied to verify how this idea can be effectively implemented in any industry and whether any further improvement in the idea can be brought forth. The mechanical design of the bot is almost complete, but still there are some doubts that is being worked upon. The Mitsubishi components required for the project has been given to us on returnable basis.

We have started to work on the software side, buying the product keys of software and other applications. The team is working parallel on image processing techniques that would be suitable for the bot. Data logging from PLC to HMI and Android application is the main area of concern where we are facing some difficulties. We have placed order for some of the electronic and electrical components in online websites.

We have not yet started the hardware side as we are short of funds required for buying components. We have put in money to buy the product key for software and other electronic components, but will not be able to contribute the entire amount as we need to take care of travel expenses as well and also have other upcoming events.

We need to submit an intermediate report by 1st week of December and so require funds to buy the required components and proceed further with our work.

**TRAINING:**

A three days training for the Programmable Logic Controller [PLC], Human Machine Interface [HMI] and Servo system at the Mitsubishi office located at Arumbakkam was provided by the Mitsubishi mentor.

The training was given from 28th November to 30th November. The first two days we had worked on PLC and HMI. The programming for PLC using GXWorks3 software was taught to us using training kit. The designing for HMI and its communication to PLC using GTWorks3 software was also taught to us. We got proper hands on training on this Mitsubishi software using their software. Servo system training was given on the third day, in which we got adequate idea how to control servo using PLC and HMI along with designing for the same.







