EEE088F 2022

Concept Proposal Template

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TRFDEV001

CRGALE002

Q1 Enviro sensing HAT Concept [5]

The HAT will be used as a water sensing module for agricultural purposes. It will have a moisture sensor located in the soil that the plants are growing in and a flow rate sensor connected to the irrigation system. These sensors will connect to a STM Discovery board, which will act as the brain of the system. This system is for indoor autonomous growing setups which has applications in disruptive agricultural industries like marijuana growing. The HAT is intended to be used in small scale, home-setups in order to automate the watering of the plant as well as small-scale, industrial applications in an emerging market.

Q2 Requirements [10]

An individual growing food in unsuitable climates/soil types

- R1.1: Requires regular watering for soil with high drainage rates
- R1.2: Requires very precise watering for high maintenance plants
- R1.3: Requires more efficient water consumption for areas experiencieng drought.

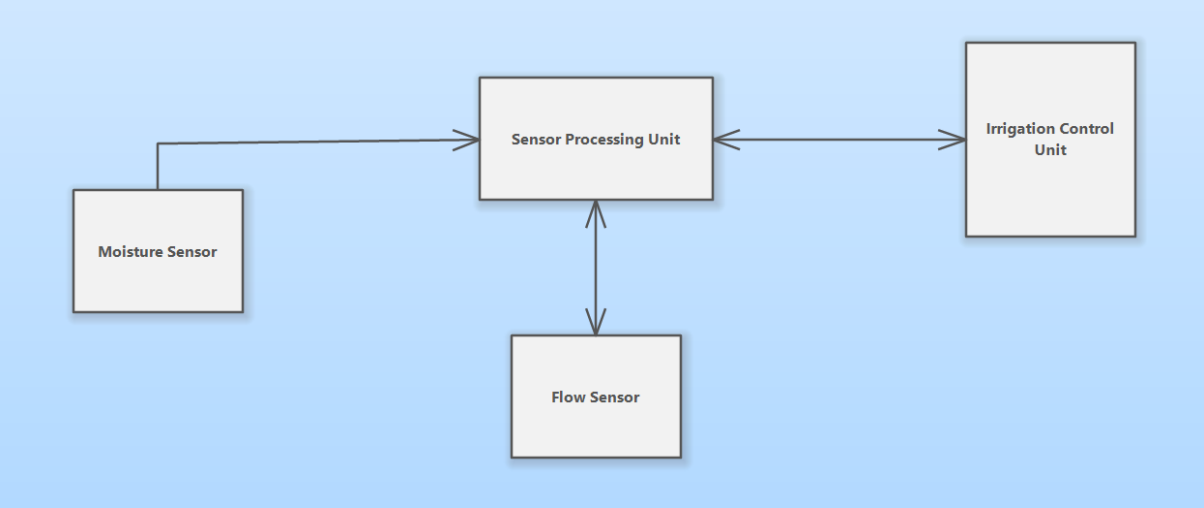
Small Scale Industrial Agriculture

- R2.1: Too many plants to manually monitor with a small workforce requires water monitoring and automation.
- R2.2: More lucrative through larger crop yields and reduced workforce.
- R2.3: Lower water costs due to less wasted water.

Quality Indoor Marijuana Growing

- R3.1: Automated watering systems provide better quality yield.
- R3.2: People who work long hours or travel would be able to maintain their grow remotely.
- R3.3: The ability to grow more plants due to not having to manually manage the water content of the soil in all the plants. This results in higher yield of the crop due to the automation of the watering.

Q3 Project Subsystems Block Diagram [5]



Q4: Link to Team Git Repo [5]

- GitHub Repo: https://github.com/JNSRYA006/EEE3088F_HAT