Basic Details of the Team and Problem Statement

Ministry : Housing and Urban Affairs

PS Code: SIH1512

Problem Statement Title: Centralized Monitoring System for Street Light Fault Detection and Location Tracking

Team Name: Electro-Infinity

Team Leader Name: Saravanan N

Institute Code (AISHE): C-37035

Institute Name: Karpagam Institute of Technology

Theme Name: Smart Automation

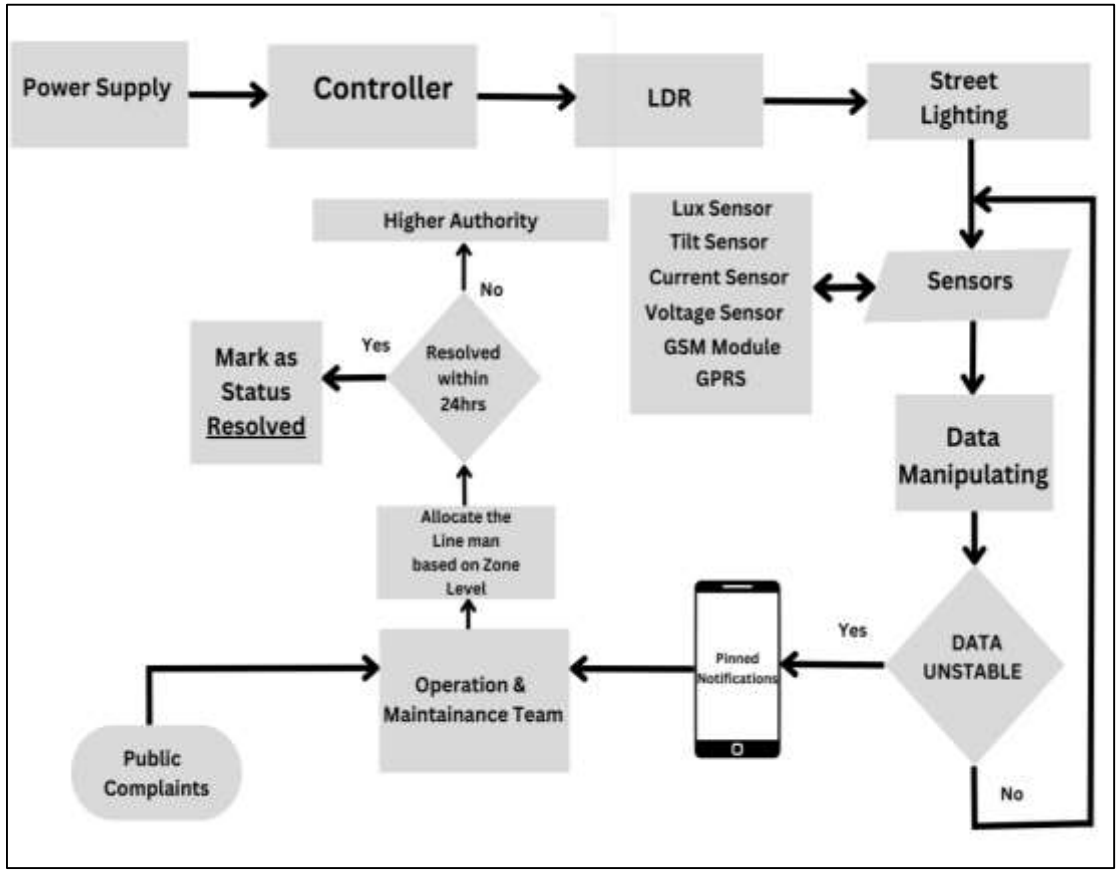
Idea Details

idea/Solution/Prototype:

Proactive Fault Prediction: Our innovative approach is to implement real-time data from street light poles to predict faults in the street light system. By analyzing key metrics such as malfunctioning of lights, current leakage and cable breakage our system can identify potential issues and alert maintenance teams preemptively.

Efficient Work Allocation: We optimize maintenance by assigning tasks based on technician zone and effectiveness. By streamlining work allocation, we minimize downtime and improve overall system reliability.

Reduced System Downtime: Our fault prevention assistance significantly reduces system downtime.



Describe your Technology stack here:

- IoT
- AI & ML
- Node.js
- Mango DB
- JavaScript

Idea/Approach Details

Use Cases

- Data collection systems help analyze street light pole faults and notify the type and location of fault to the authority members using AI and mobile apps.
- By proactively identifying faults and notifying the authorities, this system reduces the time required for fault prediction and the workload of technicians.
- If a problem is identified by the public, they can also file a complaint manually and it will be integrated to the database.
- A fault will be notified to the operation team. And workers will be assigned to solve the issue.
- If the fault is not fixed within 24 hours, it will be escalated to a higher level of authority.

Dependencies / Show stopper

- Dependence on real-time data availability, as well as potential issues with data sensors and communication infrastructure.
- Ensuring a skilled set of technicians for system maintenance and potential challenges in maintaining infrastructure components.
- Integration complexities with legacy systems and regulatory considerations.
- The need for community support, scalability to accommodate the growth of the system, and considerations regarding redundancy and backup systems to minimize downtime.

Team Member Details

Team Leader Name: Saravanan N

Branch : B.E | Stream : EEE | Year :III

Team Member 1 Name: Nishanth K

Branch :B.E | Stream : EEE | Year : III

Team Member 2 Name: Vijay Anand S

Branch : B.E | Stream : EEE | Year : III

Team Member 3 Name: Saran S

Branch :B.E | Stream : EEE | Year : III

Team Member 4 Name: Aravind Manikanda raja P

Branch :B.E | Stream : EEE | Year : III

Team Member 5 Name : Pavithra S

Branch : B.E | Stream : EEE | Year : II

Team Mentor 1 Name: Sabareeshwaran K

Category : Academic | Expertise : IoT, Electric Vehicle. | Domain Experience : 10 Years

Team Mentor 2 Name: Santhiya T

Category : Academic | Expertise : Green & Clean Technology | Domain Experience : 4 Years