TITLE PAGE

- **Problem Statement ID – 25031**
- **Problem Statement Title- Crowdsourced Civic Issue Reporting and Resolution System**
- **Theme- Clean & Green Technology**
- **PS Category- Software**
- **Team ID-**
- **Team Name- Nexonic**

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IDEA TITLE

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❖ Proposed Solution:

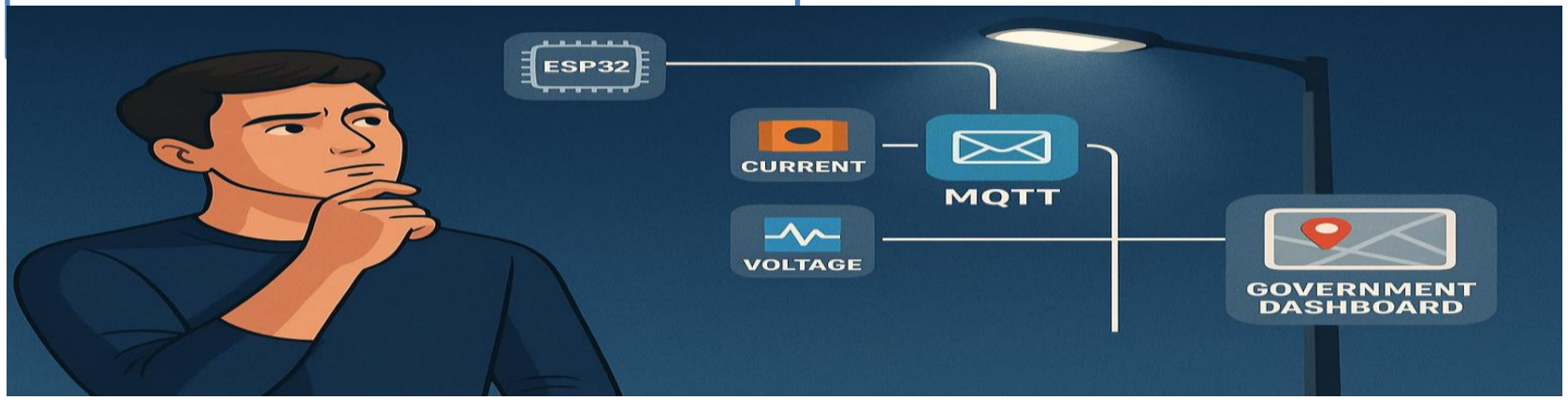
- Mobile platform to report **civic issues** (location + description).
- **Real-time** dashboard for government staff to monitor, categorize & resolve issues.
- Assigns report to correct department.
- Citizens receive live updates (Acknowledged → In-progress → Resolved).

❖ Problem Resolution:

- **Bridges communication gap** between citizens & government.
- **Faster resolution** of issues like streetlights.
- **Transparent tracking** builds trust in governance.

❖ Innovation & Uniqueness:

- **IoT-assisted automated reporting** (e.g., faulty streetlight detection).
- **Scalable cloud-based architecture** for large data handling.



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TECHNICAL APPROACH

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➢ **Sensor Integration**

- Current/Voltage sensors and microcontroller will be integrated in streetlights.

➢ **Fault Detection (Debugging)**

- Microcontroller will continuously monitor the status of streetlight.
- If any streetlight fuses or abnormal behavior is observed then the system will detect it.

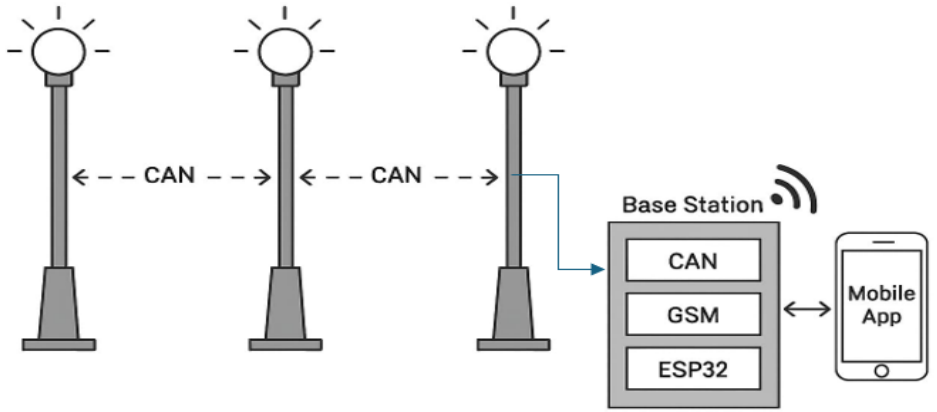
➢ **Communication Module**

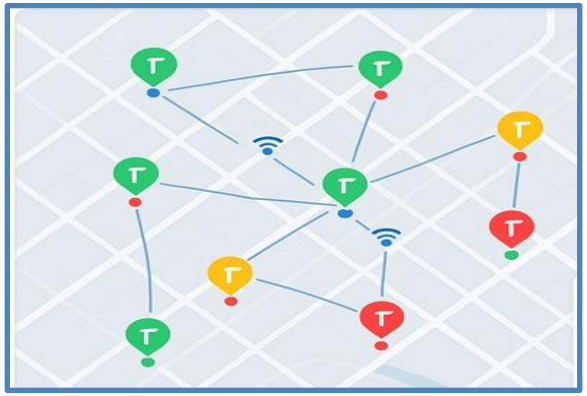
- Using IoT (CAN MODULE & GSM), data of faulty streetlight will be sent to mobile app.

➢ **Automation & Control**

- Maintenance team will get exact location and issue of faulty light, so that repair can be done fast.

PROCESS FLOW ARCHITECTURE





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FEASIBILITY AND VIABILITY

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ANALYSIS

Technical Feasibility:
- Mobile solution possible.
- **Scalable cloud backend** (Firebase/ AWS) can handle large volume of multimedia.
- IoT integration = simple, **cost-effective** hardware (ESP32, sensors, Can module, DC-DC Converter) is **technically viable**.

Financial Feasibility:
- Government adoption as **cost-effective** for app deployment.

Market Feasibility:
- **High demand**
- Aligns with **Smart City** and **Swachh Bharat Mission..**

Operational Feasibility:
- Piloted in one city → then **scaled across Jharkhand/India.**

POTENTIAL CHALLENGES AND RISKS

Technical Risks:
- Large multimedia uploads
- Real-time GPS accuracy issues
- Integration of IoT devices may face connectivity problems.

Financial Risks:
- Budget: Cloud hosting, Server scaling, and SMS/notification costs.
- Hardware scaling (if large no. of IoT devices deployed) may increase cost.

Operational Risks:
- Maintenance & upgradation responsibility after initial deployment.

STRATEGIES

Technical:
- Implement compression techniques
- Cloud storage with scalable bandwidth.
- GPS correction algorithms / multi-sensor fusion.
- Reliable network protocols (MQTT/LoRaWAN)

Financial:
- Optimize data transfer.
- Start with pilot deployment;
- Modular low-cost IoT devices / bulk procurement

Operational:
- Regular monitoring

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IMPACT AND BENEFITS

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- **Reduced Downtime** – Quick detection and debugging of street lights**.**
- **Improved Safety –** Fault-free street lighting provides more security and accident prevention.
- **Reduced maintenance cost–** Maintenance cost will be reduced.
- **Energy Efficiency –** Waste power will be detected timely and energy will be saved.
- **Smart City Integration –** System can be easily integrated with IoT/smart city ecosystem.
- **Data-Driven Maintenance –** Fault data will be recorded making predictive maintenance possible.
- **Scalability –** Solution can be deployed on a large scale in different cities/villages.

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COMPONENTS

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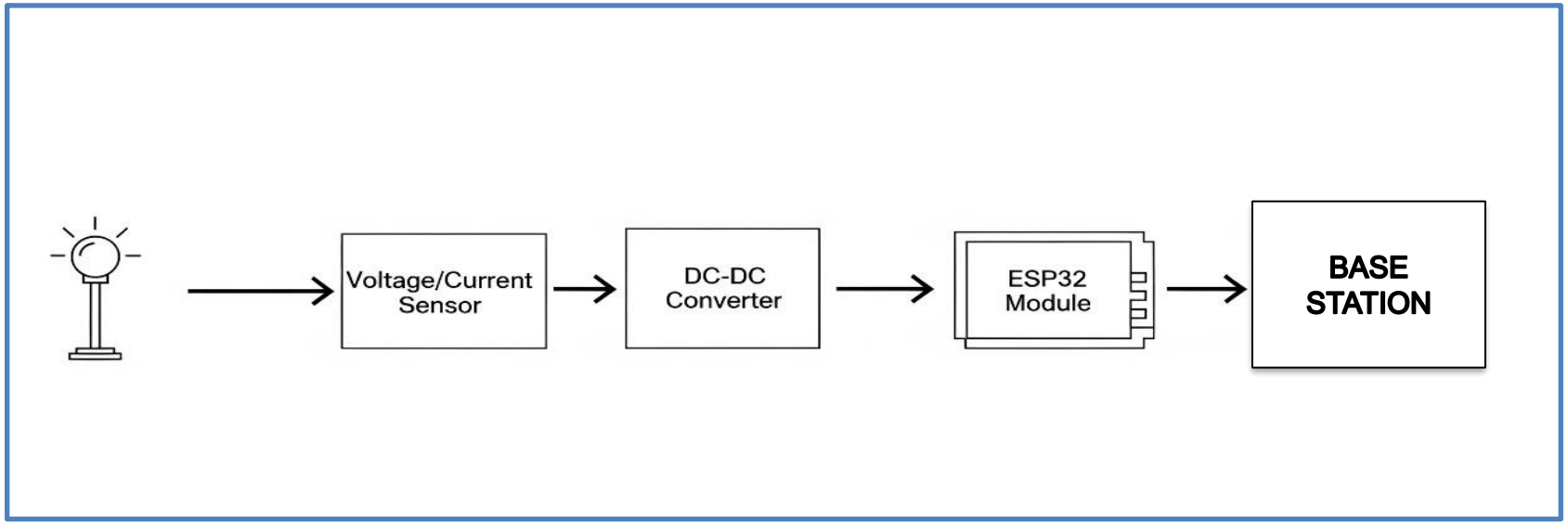
➢ **HARDWARE :**

- **Current Sensor(ACS712)**
- **Voltage Sensor(ZMPT101B)**
- **ESP32**
- **CAN Module(MP2515)**
- **DC-DC Converter(LM2596S)**



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RESEARCH AND REFERENCES

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RESEARCH SOURCES:

- Existing civic platforms: mSeva (India)
- Government initiatives: Swachh Bharat Mission, Smart Cities Mission.

REFERENCES:

- It’s a novel idea and its first of its kind