# TEMPLATE FOR PROJECT PROPOSAL

1. Major Area : Smart Town / City
2. Problem statement : How might we develop an

automated system for real-time street light fault detection, precise location tracking, and

efficient maintenance in cities to enhance urban lighting infrastructure?

1. Total Cost : 25000/-
2. College Code & College Name : 9230 & Arulmurugan College

of Engineering

1. Guide Details :

Guide Name : Mr.M. Senthil kumar

Designation : AP/ ECE

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1. Student Team details:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sl.No. | Student Reg. No. | Name of the Student | Branch | Mobile No. | email id |
| 1. | 923020106004 | K.SIVARANJANI | ECE | 9384743650 | sivaranjani0116@gmail.com |
| 2. | 923020106003 | P.POORNIMA | ECE | 9080636370 | poornimaprakash44@gmail.com |
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1. Project Summary

* Create an automated system integrating sensors and AI algorithms to detect street light faults in real-time, providing precise location tracking. Implement a centralized dashboard for maintenance teams to efficiently prioritize and address issues, enhancing overall urban lighting infrastructure.

1. Proposed solution with methodology :
2. Pilot Implementation
3. Iterative Development
4. Collaboration with Municipalities
5. User Training
6. Scalability
7. Continuous Monitoring
8. Workplan / time schedule indicating the project mile stone :

Project Work Plan and Milestones :

Phase 1 : Project Initiation (Week 1-2)

Phase 2: System Design and Prototyping(Week 2-5)

Phase 3: System Implementation (Week 5- 8)

Phase 4: Testing and Refinement (Week 8-12)

Phase 5: Deployment and Scaling (Week 12-17)

Phase 6: Project Conclusion (Week 17-21)

1. Plan of action of implementation :

Phase 1 : Project Initiation (Week 1-2)

Week 1 : Project Kickoff

Phase 2: System Design and Prototyping(Week 2-5)

Week 2 : Sensor Selection and Integration

Week 3 : Communication Network Setup

Phase 3: System Implementation (Week 5- 8)

Week 4 : GPS Integration

Week 5 : Mobile App Development.

Phase 4: Testing and Refinement (Week 8-12)

Week 6: Pilot Implementation.

Phase 5: Deployment and Scaling (Week 12-17)

Week 7 : Full-Scale Deployment

Phase 6: Project Conclusion (Week 17-21)

Week 8 : Final Review and Handover

1. List of facilities available in the college to develop the prototype of the project :

* Laboratory for Sensor Testing
* Communication Technology Lab
* Data Analysis Center
* GPS Integration Workshop
* Software Development Hub
* Pilot Implementation Zone
* User Feedback Collection Center
* Continuous Monitoring Hub
* Training Facility
* Documentation Center
* Citywide Deployment Command Center

1. Nature of Industry support for the project, (if any)

1. Sensor Manufacturers :

Collaborate with sensor manufacturers to ensure the availability and customization of IoT sensors suitable for street light fault detection.

2. Communication Technology Providers :

Seek support from communication technology companies to implement and optimize reliable networks (e.g., LoRa, 5G) for seamless data transmission.

3. AI and Machine Learning Experts:

Engage with experts in AI and machine learning to refine algorithms for real-time street light fault detection, leveraging industry insights and best practices.

4. GPS Technology Partners:

Partner with GPS technology providers to integrate accurate location tracking capabilities into the system.

5. Software Development Companies:

Collaborate with software development firms to design and create the centralized dashboard and mobile app, ensuring user-friendly interfaces.

6. Urban Planning and Infrastructure Consultants:

Seek support from urban planning experts to align the system with city infrastructure, regulations, and future expansion plans.

7. Pilot Phase Collaboration with Cities:

Collaborate with city authorities during the pilot phase, fostering a partnership for testing, feedback collection, and fine-tuning the system based on real-world scenarios.

8. Continuous Monitoring and Data Analytics Services:

Partner with companies specializing in continuous monitoring and data analytics to ensure the system's optimal performance and identify areas for improvement.

9. Security and Cybersecurity Experts:

Engage with cybersecurity experts to implement robust security measures, safeguarding the system against unauthorized access and data breaches.

10. Training and Skill Development Partners:

Collaborate with organizations specializing in training and skill development to ensure effective training programs for maintenance teams and stakeholders.

11. Governmental and Municipal Support:

Seek support from local government bodies and municipalities to facilitate regulatory approvals, access to city infrastructure, and alignment with urban development plans.

1. Details of Financial assistance required
2. Research and Development (R&D) Funding Costs Rs 2000/-
3. Sensor Procurement and Integration Costs Rs 3000/-
4. Communication Network Investment Costs Rs 2000/-
5. AI and Machine Learning Expertise Costs Rs 4000/-
6. Software Development Costs Rs 1500/-
7. GPS Integration Costs Rs 2000/-
8. Training and Skill Development Costs Rs 1500/-
9. Government and Municipal Collaboration Costs Rs 2000/-
10. Public-Private Partnership Costs Rs 4000/-
11. Maintenance Service Provider Collaboration Costs Rs 3000/-
12. Expected outcomes / results

* Real-time Fault Detection
* Precise Location Tracking
* Improved Urban Lighting Infrastructure
* Energy Efficiency
* Cost Savings
* Increased Public Safety
* Data-Driven Insights
* User-Friendly Dashboard and Mobile App
* Predictive Maintenance Capability
* Public Satisfaction

# UNDERTAKING

1. The college will provide the basic infrastructure and other required facilities to the students for timely completion of their projects.
2. The college assumes to undertake the financial and other management responsibilities of the project.
3. The college will ensure that the funds provided are utilized only for the purpose provided and any remaining amount will be returned back to the University after the time of completion of the project.

Signature of the Mentor Signature and seal of the principal