



Modernizing Urban Lighting Infrastructure with Centralized Control and Monitoring Systems (CCMS)

Challenge

With urbanization accelerating across India, local governments face growing pressure to improve civic infrastructure, optimize energy usage, and meet sustainability goals. Street lighting plays a critical role in ensuring public safety, enabling economic activity, and improving the quality of life—particularly in rapidly expanding towns and peri-urban areas.

However, legacy street lighting systems across Indian cities and municipalities are often marked by inefficiencies: high energy consumption, lack of centralized oversight, maintenance complexities, and inadequate monitoring mechanisms. Manual operation of streetlights—typically through physical switches—further exacerbates issues such as delayed switching, unnecessary power usage during daylight hours, and inconsistent fault reporting.

With India's growing push for smart infrastructure and energy efficiency, modernizing streetlight management systems became a national priority.

Solution

Raminfo Limited was awarded multiple contracts by Energy Efficiency Services Limited (EESL) and Bridge & Roof Co. (India) Ltd. to implement Centralized Control and Monitoring Systems (CCMS) across key regions of Rajasthan, Uttar Pradesh, Andhra Pradesh, and Chhattisgarh. The implementation included:

- **Design, Manufacture, Supply, Installation & Commissioning of CCMS units** at streetlight switch points in gram panchayats and municipalities.
- **Turnkey Execution:** From supply to field deployment across thousands of locations in Rajasthan, Uttar Pradesh, Andhra Pradesh, and Chhattisgarh.
- **Remote Management Platform:** Development of a web-based dashboard accessible to ULB officials, providing real-time insights into energy usage, system health, and performance analytics.
- **Integrated Safety & Connectivity:** Installation including surge protection, and secured SIM-based data communication modules for uninterrupted service.
- **SLA-Based Service Delivery:** Ensured a 97% uptime through scheduled checks, emergency repairs, and automatic fault logging through cloud-connected systems.



- **GIS Mapping Integration:** Location tagging of each streetlight cluster to enable geospatial monitoring and faster fault rectification.
- **Reporting Engine:** Automated generation of daily, monthly, and exception-based reports to drive decision-making and compliance.
- **7-Year Warranty & Maintenance:** Comprehensive service coverage including regular performance reports, preventive maintenance, and on-call resolution within 48 hours.

Impact

- Total installed Centralized Control and Monitoring System (CCMS): **15,000+**
- Total connected LED street lights at installed CCMS: **7.50 Lakhs+**
- Energy Savings: **45–55% i.e. 85 lakh units/day**
- **Enhanced Maintenance:** Fault detection and resolution improved drastically—often within 48–72 hours.
- **Public Safety:** Well-lit streets contributed to enhanced community security, especially in rural and semi-urban areas.
- **Data-Driven Governance:** EESL and ULBs gained real-time visibility and access to actionable data, enabling transparent decision-making, budget optimization, and performance-based vendor evaluations.
- **Scalability:** The system architecture allowed seamless integration of new streetlights, enabling long-term sustainability and can be easily scaled across other districts and states.

Raminfo's CCMS implementation across Rajasthan, Uttar Pradesh, Andhra Pradesh, and Chhattisgarh marks a significant step in India's journey toward smarter, greener cities. By integrating smart infrastructure with robust on-ground execution, Raminfo enabled state governments and urban bodies to make street lighting more intelligent, accountable, and sustainable, reinforcing our position as a trusted partner in public infrastructure digitization.