




How Lighting Controls Can Revolutionize Service & Maintenance

Presented By: Collin Weiner

CONVENTION EDUCATION

About Me

- **President, CalEnergy Corporation** - My mission is to live life with integrity, and empathy, and be a positive force in the lives of others.
- **Instructor, Alameda County JATC; SBEMS** - I empower apprentices to navigate challenges and seize opportunities, ensuring their success and the industry's continuous growth.'
- **Over Promise & Over Deliver** - NorCal NECA Board of Directors, NECA Political Leadership Council, Electri International Council, Chairman of the Technology & Career advancement committee, Electrical Contractors Trust.
- **Unhealthy obsession with cats and flamingos!**

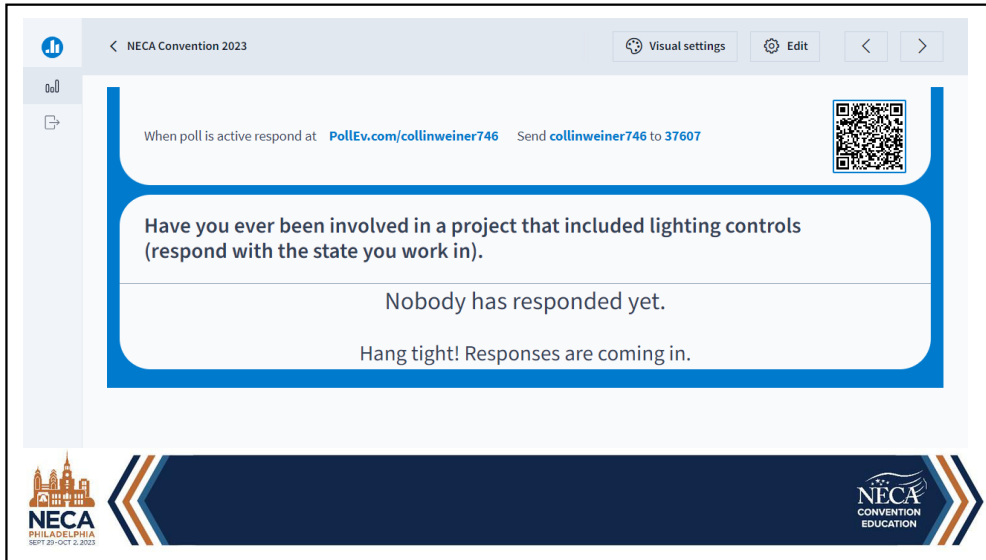



The Catsle

Let's Take A Poll!!!







Introduction

- Current State of Lighting Controls
- Smart Lighting Systems
- IOT Integration
- Flexibility & Scalability
- Service & Support Agreements

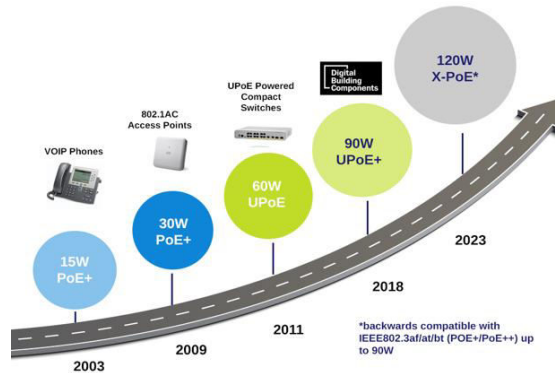
Current State of Lighting Control Systems

- Line Voltage Centralized or Distributed Systems
- Power Over Ethernet
- Wireless Mesh Networks
- Class 4 Fault Managed Power

Centralized & Distributed Systems

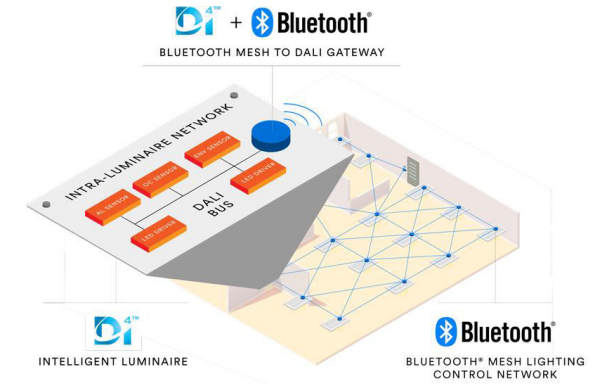
Power Over Ethernet

- **Device Types:** IP Phones, Wireless Access Points, Surveillance Cameras, LED Lighting, BAS Devices.
- **Cost Savings:** Consolidates Power & Data Connections.
- **Flexibility & Scalability:** Easy to add or move devices.
- **Energy Efficiency:** Power & Data Provides Opportunities for Smart Building Automation.



Wireless Mesh Networks

Bluetooth® mesh networking enables many-to-many (m:m) device communications and is ideally suited for creating IoT solutions where tens, hundreds, or thousands of devices need to reliably and securely communicate with one another.



Wireless Mesh Networks

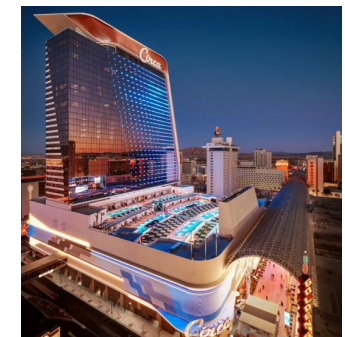
- **Bluetooth® NLC** - Establishes a true, global wireless standard that frees buyers and installers from vendor lock-in and gives them confidence that building components from different vendors will work seamlessly with each other.
- **Bluetooth Growth Forecast** - A 115% CAGR of networked Bluetooth lighting control components shipped from 2020 – 2027.

The Evolution of Bluetooth® Lighting Control

	Bluetooth® LE (2010)	Bluetooth® Mesh (2017)	Bluetooth® NLC (2023)
Device Layer Defines roles & responsibilities of device	Proprietary Device Profiles	Proprietary Device Profiles	Bluetooth® NLC Device Profiles
Communication Layer Defines how devices communicate with each other over radio	Proprietary Mesh	Bluetooth® Mesh	Bluetooth® Mesh
Radio Layer Defines how devices transmit data over radio frequencies	Bluetooth® Low Energy (LE)	Bluetooth® Low Energy (LE)	Bluetooth® Low Energy (LE)
	ECONOMIES OF SCALE	FASTER INNOVATION	GLOBAL INTEROPERABILITY

Digital Power Systems

- **Class 4 FMPS**- Accepted into 2023 National Electrical Code as new Article 726.
- **Power Delivery** - Up to 450 Volts AC or DC and 20x more than a Class 2 system up to 2000 watts over 2000 meters.
- **Fault Management** – Built in electronics can manage a fault from line to earth, line to line, or even electrical arcs within milliseconds.
- **Installation** – Cables must have copper conductors 6 awg – 24 awg. In most cases, conduit is not required. Cables can carry Data and power to devices.
- **Completed Projects** – Hard Rock Stadium, Circa Hotel Las Vegas, Sinclair Hotel Downtown Fort worth, and More.



Embedded IOT Systems

- System automation & control
- Indoor navigation
- Point of interest information
- Asset tracking
- Item finding
- Space utilization
- Predictive maintenance
- Optimize environmental conditions



Microgrids & Smart Cities

- **Urban Population** - Today, some 56% of the world's population – 4.4 billion inhabitants – live in cities. This trend is expected to continue, with the urban population more than doubling its current size by 2050, at which point nearly 7 of 10 people will live in cities.
- **Urban Challenges** – Resource Management, Grid Stability, Traffic, Internet, Healthcare, Cyber Security
- **Demand Side Management** – Energy efficiency, energy conservation, distributed energy resources, load shifting, peak management, and demand response



Building Automation & Service Agreements

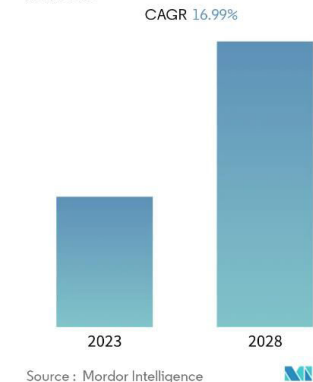
- **Installation** – Understand the building, the system, and the client.
- **Extended Warranty** – Write in a clause of qualified maintenance personnel on the warranty program to secure future work.
- **Sell Business or ESOP** - Get 10 times EBITA or higher by having recurring revenues.
- **Service Departments** – Contractors with a robust service department will report service represents 30% of revenue, but 85% of the value of their business

	Silver Plan	Gold Plan	Platinum Plan	
Plan Features	100% Parts & 100% Lutron Labor Coverage	•	•	
	Scheduled Maintenance Visits		•	
	24-Hour Onsite/Remote Response Time		•	
	48-Hour Onsite/Remote Response Time		•	
	72-Hour Onsite/Remote Response Time	•		
	Priority Support Line			•
	Unlimited Technical Hotline Support	•	•	•
	Remote Diagnostics (Applicable for connected Quantum, Athena, and Via Systems)	•	•	•

Market Growth

- The lighting control system market is expected to reach USD 50.06 billion in 2026 from USD 19.69 billion in 2020, witnessing a CAGR of 16.99%, during the forecast period (2021 - 2026)
- The adoption of the Internet of Things (IoT), with the increasing usage of smart devices, such as smartphones, tablets, etc
- The improved connectivity and advancements in technologies solutions
- The concept of smart cities is also increasing in different regions and this movement is supported by many government initiatives

Lighting Control System Market
Market Size





“I can’t stop the wave, but I can learn to surf and enjoy the ride!”

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