ECHELON’S HISTORY

Industry experience

- 25+ years of history in IoT
- Highly reliable and scalable systems
- Several border-to-border city deployments
- 65+ patents

Worldwide offices

- Americas HQ: Santa Clara, CA
- Europe: Netherlands and UK
- Asia: China, Hong Kong, Japan, and Korea
ECHELON SOLUTIONS TRUSTED ACROSS CITIES, CAMPUSES AND BUILDINGS

36M+ Smart Grid Devices  
300,000 Smart Buildings  
500 Outdoor Lighting Systems  
Specified Into Numerous Trains
NETWORKED OUTDOOR LIGHTING

Highly scalable mid band municipal network

LumInsight CMS (Cloud or Enterprise)

Street/Walkway

LumInsight CMS

Street/Walkway

Gateway or BaseStation

Powerline

Segment Controller

Powerline

GWX

Sensor

InSight

Cognitive Camera

Wireless 900MHz

Controllers

Sensors

Routers/Gateway

Devices

Lots/Area

Garage

Building Exterior

Highly scalable mid band municipal network
REASON #1: DEPLOY ENERGY SAVINGS AND MONITORING STRATEGIES

- Traditional HPS
- LED Conversion
- Scheduled Dimming
- Adaptive Lighting

Other Areas for Energy Savings:
- Eliminate Day-Burners
- Eliminate Over Lighting
- Pole Metering

50% Savings from Switching to LED

Additional 35-40% Savings from Control Schemes

Energy Usage
REASON # 2: DIGITIZE ASSET MANAGEMENT AND IMPROVE OPERATIONAL EFFICIENCIES

- Eliminate daily/nightly truck rolls
- Reduce day burners and night outages
- Optimize maintenance schedules and routes
- Reduce light outage call volumes and complaints
- Reduce safety incidents
- Digitize billing and asset management
- 20-40% reduction of operational and maintenance expense
REASON # 3: DATA AND SENSOR NETWORK FOR SMART CITY

Quality of Life  white tuning, smart parking

Safety  traffic adaptive, Emergency Scene Assist, weather

Operational efficiency  predictive maintenance, alarms, asset management

Energy savings  dynamic scheduling, occupancy adaptive lighting, trimming

Connectivity and application services platform

Network Options
- PLC
- RF
- IP

Edge Devices
- Camera
- LC
- CB
- Sensor

Universal Gateway

Application Management System
SMART CITY APPLICATIONS
SMART CAMPUS AND CITY APPLICATIONS

Safety
A: Direction of Travel Lighting
B: Traffic Adaptive Lighting
B: Weather Adaptive Lighting
B: Emergency Scene Assist
C: Emergency Vehicle Assist

Quality of Life
A: Activity based lighting
A: Follow me lighting
B: White Tuning
B: School Zone Beacons
C: Parking Availability

Operational Efficiency
A: Zone based scheduling
A: Trimming/Dimming
A: Alarms and Notifications
C: Copper Wire Theft
C: Predictive Maintenance
C: Traffic Counting

New Revenue
C: Smart Parking Apps
C: Parking: Enforcement assist
C: Digital Signage operation
C: Monitor EV Charging

LumInsight Applications

A: Released    B: POC    C: Possible
TRAFFIC COUNTING AND ADAPTIVE LIGHTING

On-camera (‘edge’) video processing and machine learning algorithms enables fast local decision-making and minimizes need for network bandwidth

- Adaptive sequence automatically adjusts light levels based on traffic volumes – potential to save 30-40% energy
- InSight provides data to cloud-based applications for analyzing and optimizing signal operations and transportation planning
DYNAMIC, ON-DEMAND WHITE TUNING

Bright White Lighting Ideal for:
♦ Higher levels of activity
♦ High risk areas (intersections, on/off ramps)
♦ Emergency scenes and first responder

Warm White Lighting Ideal for:
♦ Safe nighttime illumination
♦ Historic sites and residential sites
♦ Natural environments

Watch Our Video
EMERGENCY SCENE ASSIST FOR CALL BOX

- Integrate with existing emergency call box systems
- Immediate and proactive response to deter crime
- Heightened level of illumination for first responders
SMART PARKING

♦ On-camera “edge” video processing for parking space availability
♦ InSight provides parking availability to digital signage or 3rd party app
♦ InSight provides data to cloud based applications for optimizing space utilization and enforcing parking violations