Intelligent Streetlight Control and Management System

Being an innovator, we constantly create the next generation technology to make the world a smarter place to live in. As LED lights are rapidly adapted by business to replace the existing Halogen lights, we introduce a comprehensive selection of high efficient, robust LED Drivers to meet the power demand of various LED lights. At the same time, we want to build a control system to manage hundreds and even thousands of streetlights from the web to help municipalities increase lighting efficiency.

To accomplish this goal, Billion partners with worldwide lighting solution providers and develops our own strategic Smart Lighting portfolio - Intelligent Streetlight Control and Management System (LCMS) solution. There are two types of communication systems for Billion LCMS: Narrowband Power Line (NPL) and Broadband Power Line (BPL). Both systems enable administrators to centrally monitor streetlight on an intelligent cloud computing platform.

Product Features

Automation
● Automatically switches on/off/dim lighting level in accordance with environmental illuminations.
● Administrator access to performance diagnosis for streetlights data through the Billion's intelligent cloud.
● System automatically sends out e-mail alarms notifying error. (ex. power outage, system abnormality)

Intelligence
● Integrated with Google Map platform displaying the geographic locations of different streetlights.
● Selectable map sources for easy lighting positioing and status reading.
● Supports smart phone applications for on-site streetlight testing. Administrators can identify, track, and immediately report to control center using the intelligent cloud.

Energy Saving
● Provides the function of user-defined lighting scale with 10 dimming levels.
● Colored icons show streetlight status and system error occurrences.
● Power consumption report of LCMS in comparison to traditional streetlights.

System Integrator

Municipality

Commercial Building

Multi-Location Enterprise

It Begins with an Idea to Build a Smart City

Billion Intelligent Streetlight Control and Management System (LCMS) enables a community to meet energy conservation objectives by adapting a comprehensive street lighting solution. Energy savings up to 70% efficiency is achievable as a result of improved performance of luminaries, lamps and intelligent control management. It is ideal for project managers or administrators at utilities, departments of transportation, transit authorities, and municipalities to meet their energy conservation goals.

Smart Lighting NPLC System Architecture

SmartServer Segment Controller directly controls the power of an alignment of streetlights. To achieve a unified management, RF Bridge (CRD 3000) is a street light module expanding the network coverage of SmartServer Segment Controller by bridging the communications of different streetlight segments. The figure shows that RF Bridge (CRD 3000) is used to bridge and control multiple lighting segments to reduce hardware and WAN network deployment costs.
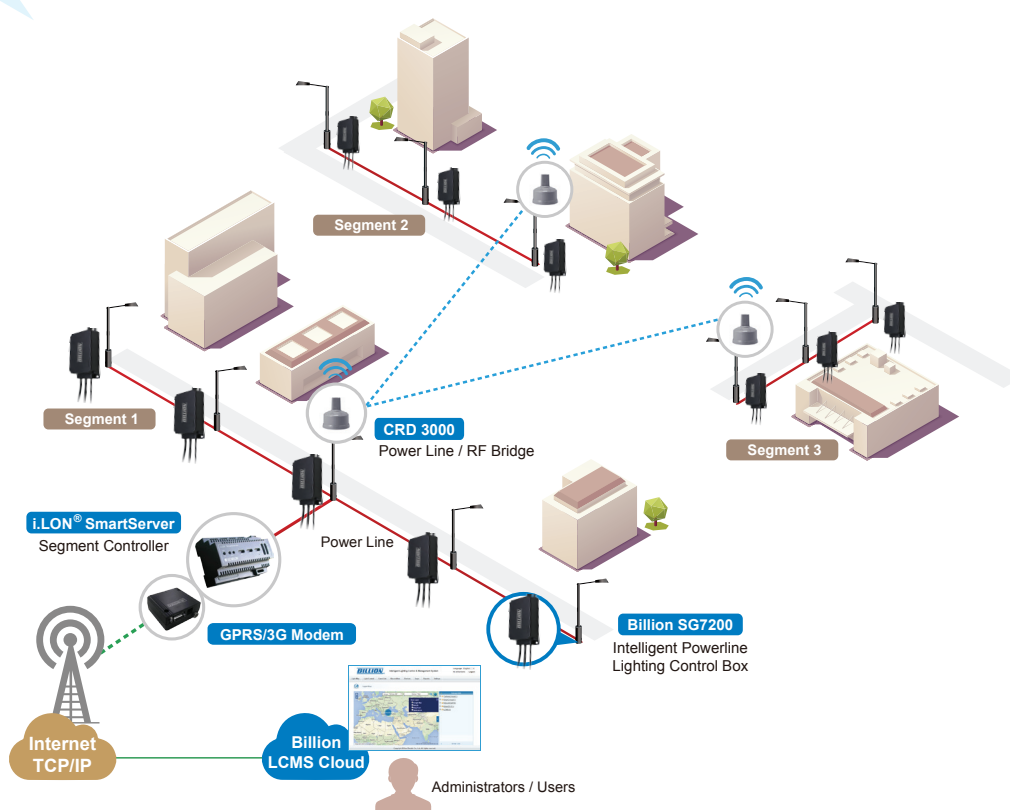
Key Components of LCMS

Billion SG7200
Intelligent Powerline Lighting Control Box

- Standards-based power line signaling
- Certified with LonMark Outdoor Luminaire Controller profile
- Uses existing city electricity wires for power and communications

i.LON ® SmartServer
Segment Controller

- Standards-based advanced bridge to IP networks
- Segment controller

Billion LCMS
Intelligent Streetlight Control and Management System Software

- Flexible architecture with choice of luminaries
- Remote monitoring and diagnosis
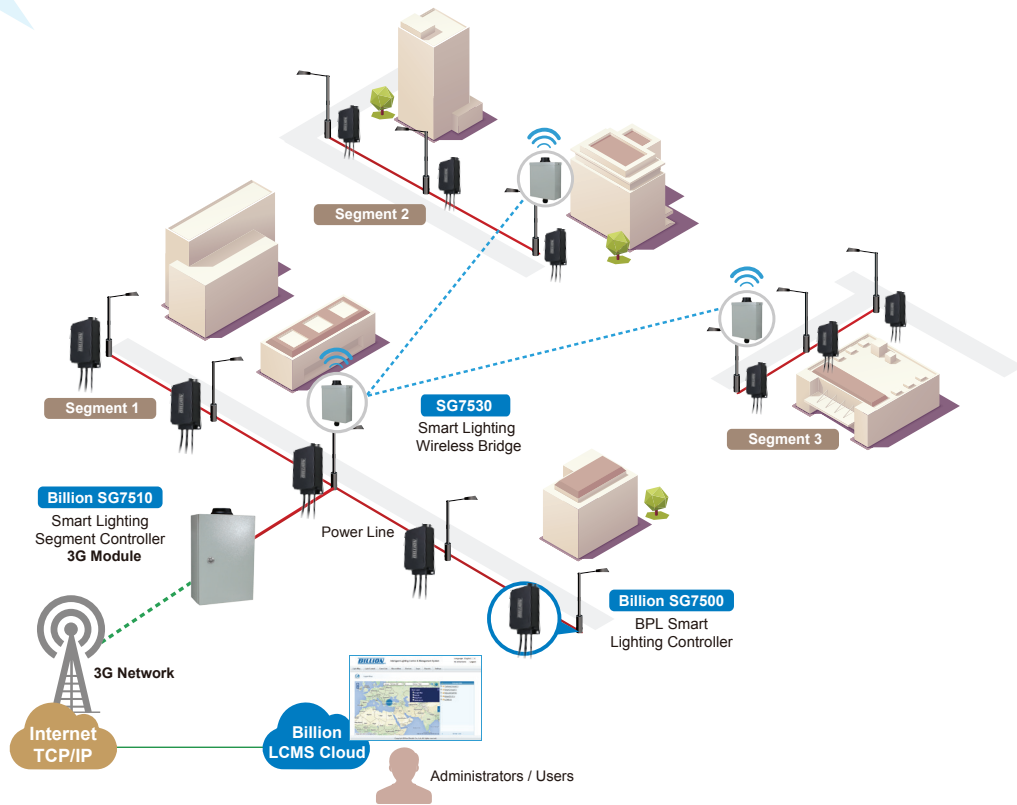- Manage large numbers of networked streetlights

CRD 3000
RF/Powerline Bridge

- RF bridge of Echelon PLC signal for connecting different PLC segments
- Ideal for large-scale, multiple segments streetlight area

Smart Lighting BPLC System Architecture

The diagram indicates the system layout of Billion's LCMS Broadband PLC technology. The Smart Lighting Segment Controller (SG7510) communication gateway receives and responds to the lighting data that is transferred from the Smart Lighting Controller (SG7500). For any particular circumstance, Smart Lighting Wireless Bridge (SG7530) can be optionally mounted underneath the assigned street light fixtures, bridging the status of individual streetlight segments to one versatile 3G Smart Lighting Segment Controller (SG7510).

Segment 2

SG7530
Smart Lighting
Wireless Bridge

Segment 1

Segment 3

Billion SG7510
Smart Lighting
Segment Controller
3G Module

Power Line

Billion SG7500
BPL Smart
Lighting Controller

3G Network

Internet
TCP/IP

Billion
LCMS Cloud

Administrators / Users

Major Components of LCMS

Billion SG7500
Intelligent Broadband Powerline Lighting Control Box

- Communicate over AC power line
- Remote lighting switch on/off functionality
- Dimming adjustment 10% ~ 100 %
- Measure AC output for
  - Voltage
  - Current
  - Power Consumption
- Compact and modest model size
- IP-67 compliant rugged design for high level of protection against dust and water

Billion LCMS Cloud
Intelligent Streetlight Control and Management Cloud

- Suitable for medium to large area
  - Support large city streetlights management
  - No limitation for number of streetlights
  - Support operation similar to standalone system
- More functions
  - Web interface for operation from PC/Pad/Phone
  - Support Google/Bing/ArcGIS/Openstreet map
  - Device repair management

Billion SG7510
Broadband Powerline Smart Lighting Segment Controller

- Standards-based advanced bridge to IP networks
- Segment controller

Billion SG7530
Broadband Powerline Smart Lighting Wireless Bridge

- RF bridge of BPL signal for connecting different BPL segments
- Ideal for large-scale, multiple segments streetlight area

LCMS Cloud Service

LCMS Cloud supports system operator and control center by providing an open online platform to review real-time streetlight statistic, day/month/year power consumption, lighting performance reports, and to receive facility repairing notification. An innovative, intelligent technology to take full controls of streetlight management.
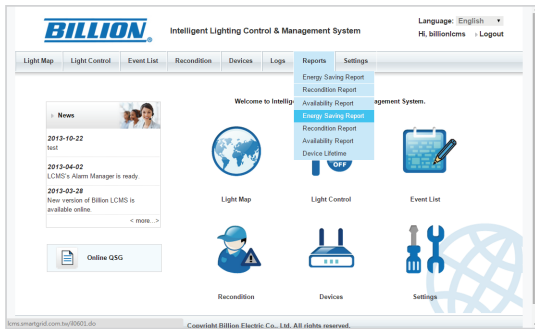

User-friendly Menu for Easy Operation

Complete information of streetlight is presented and identified on the Google Map. Administrator can choose, browse, and check real-time status of mutiple streetlight networks.
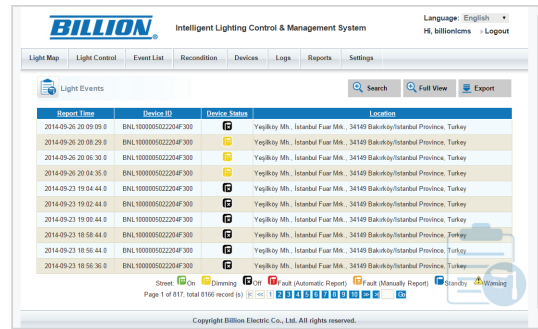
Customized System Report

Review and monitor the current status of all streetlights in a list of customized, informative report. LCMS Cloud can automatically filter and organize data according to individual user's preferred system settling.
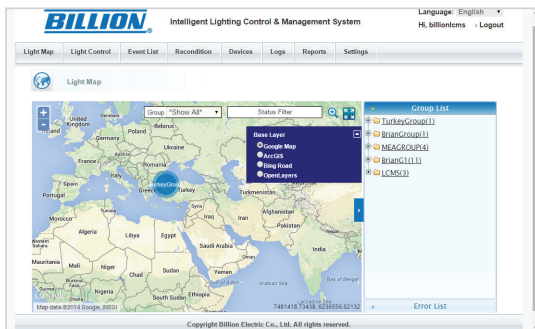
Choose a Favorite Map Display

Full streetlight information displays on Google, Bing, ArcGIS, and Open Layer (Open Street) Map. Administrator can enjoy the convenience to browse and check streetlight network status via both online and offline modes.


Easy Installation with Smart Phone

Administrator can make GPS location quickly by using a smart phone and collect the light controller ID information with barcode scanner App easily.

LCMS Standalone System

LCMS standalone system is suitable to build a smaller, private, and regional streelight management network. Administrators are able to check lighting status and streetlight locations without the need of Internet connection.
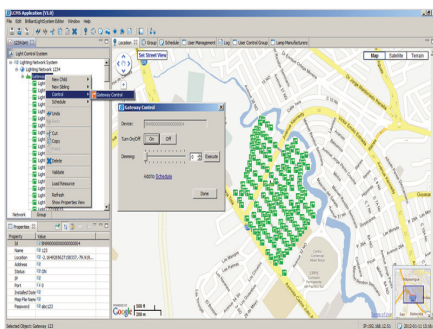
Neat User Interface

Simple, easy-to-understand, and instinctive UI designs + complete internal system function keys = a powerful upgrade of lighting management experience.
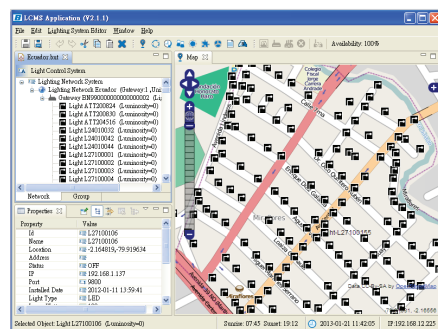
Off-line Mapping Mode

Administrator is able to import graphic map into Billion LCMS to operate an off-line mapping mode and to establish a larger scale of streetlight network.