

Welcome

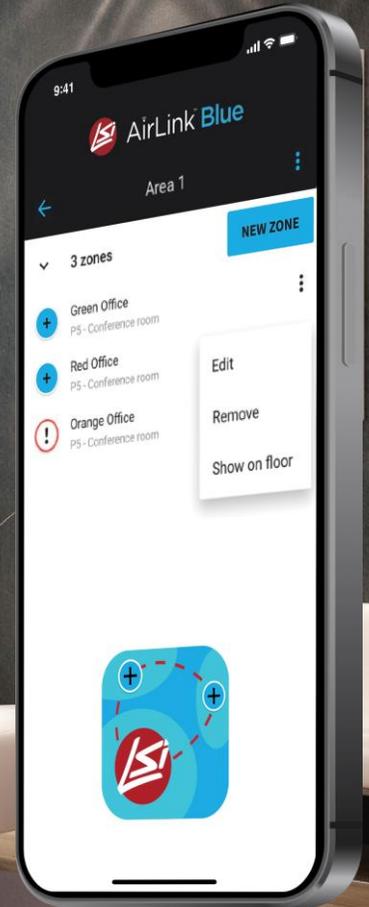




# SCALABLE CONTROLS SOLUTIONS



Brian Daley  
Director, Product  
Management, Canopy &  
Controls



# Let's Talk Controls



# Welcome to Controls



## Remote Control for TV

Fig. 1. The Emerson model 1158 remote-control unit shown here is capable of duplicating all of the TV set's front panel adjustments for picture and sound.

By  
**WALTER H. BUCHSBAUM**  
Television Consultant  
RADIO & TELEVISION NEWS

*In many cases these units are furnished with the set, but, they can be installed by any service technician.*

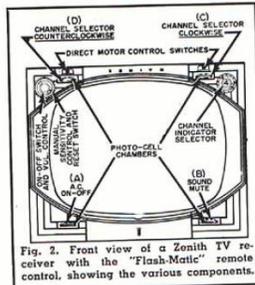


Fig. 2. Front view of a Zenith TV receiver with the "Flash-Matic" remote control, showing the various components.



Left: Apple Remote. Right: Remote control for a 1950s Dumont television console. Photo used by permission of Steve McVoy and the [Early Television Museum](#).



# Welcome to Controls



# Welcome to Controls

## Gas Lamp

Early Light Fixture



## Switch

On / Off Electric Light



## 3-way Dimmer

Advanced Residential Control

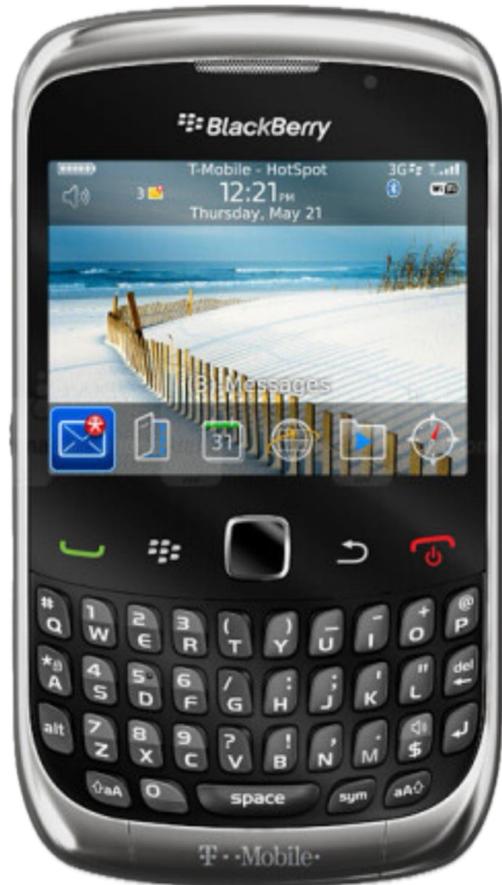


# Welcome to Controls

- Paradigm Shifts (a standard, perspective, set of ideas – our expectation)
  - Our expectations change
  - New ideas and new technology instigate / accelerate the paradigms
    - New product, process or pitch
  - Don't be caught on the wrong side of the paradigm!

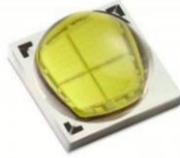
# Welcome to Controls

- Paradigm Shifts
  - Digital photography
    - Kodak invented in 1974, shifted to digital in the late 90's
  - Netflix – DVD by mail service
    - Netflix offered to sell to Blockbuster for \$50M in 2000 (BB worth \$5.9B)
    - Netflix valued = \$194B; Blockbuster filed for Bankruptcy in 2010
  - The Telephone
    - Alexander Graham Bell offered up his patent to Western Union for \$100K in 1876
    - Telephone takes over telecommunications for the next 100 years



Nobody wants a touchscreen

# LED is a fad



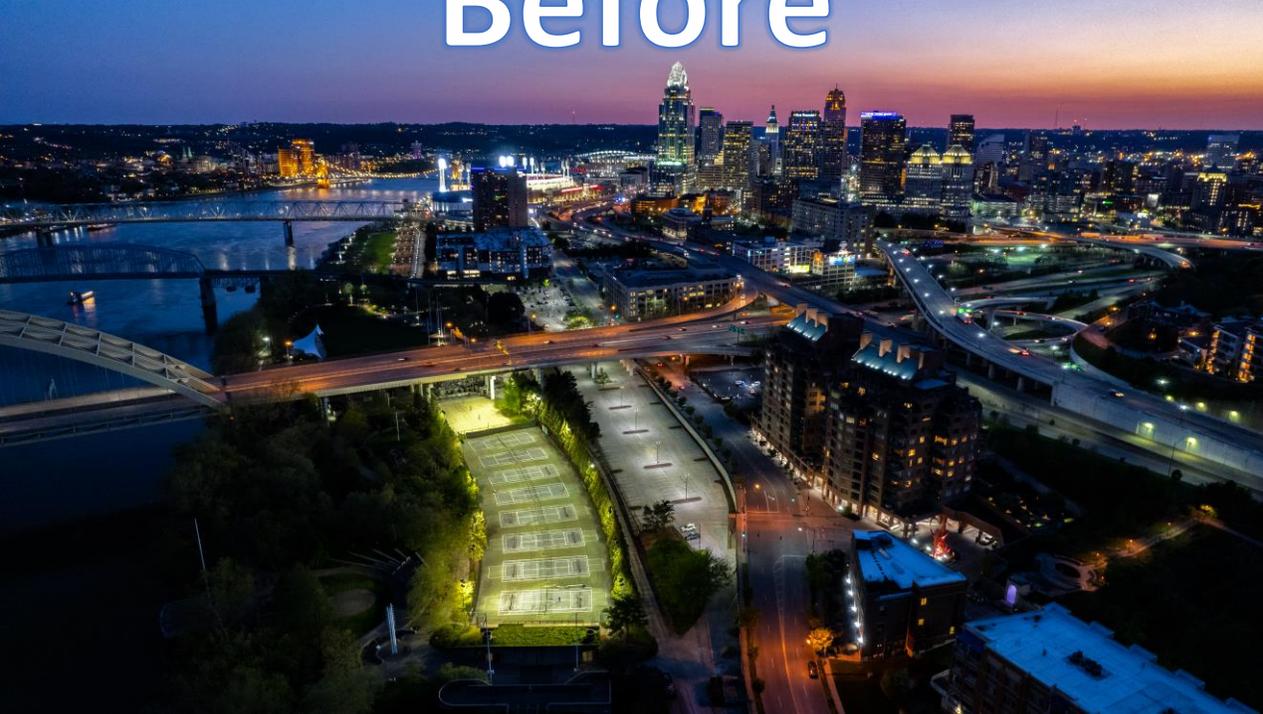
**LED**



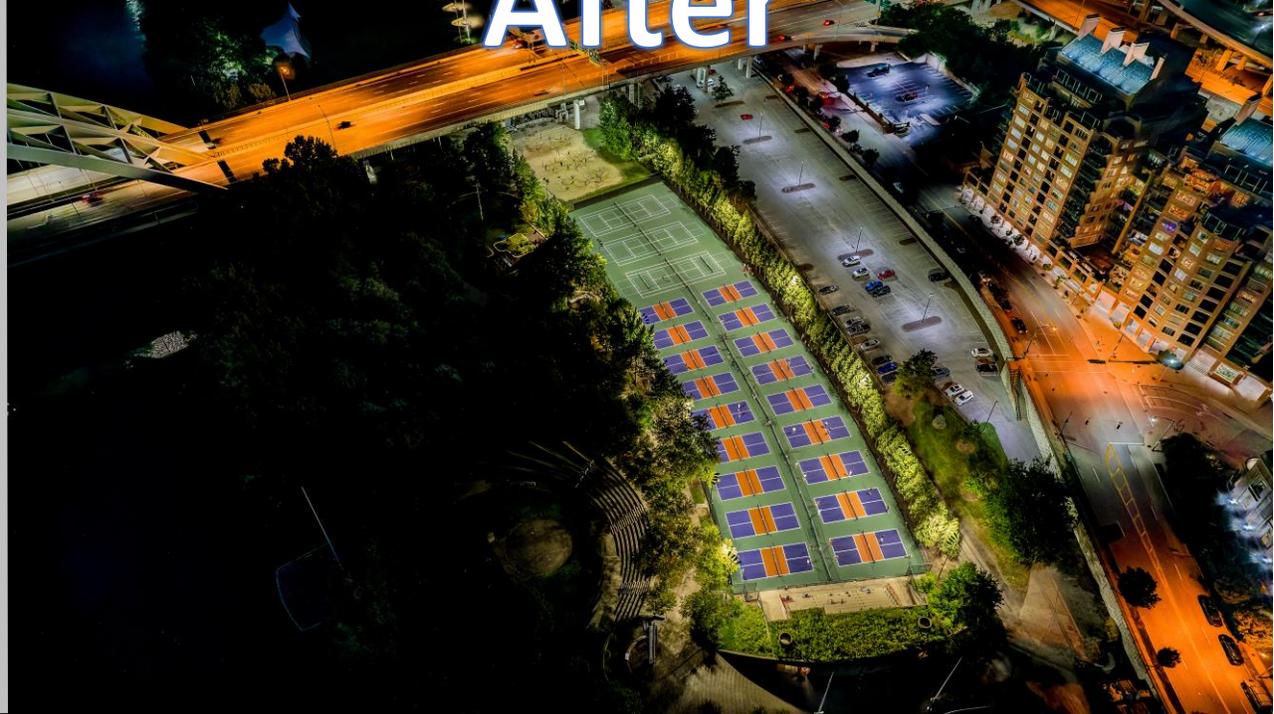
**HID**



Before



After





# Paradigms are Shifting Right Now

- LED lighting will never be preferred
- Motion sensing and daylight harvesting will never be easy enough
- Wireless lighting control will never be dependable
- Bluetooth wireless will never work for lighting control
- Power over the ethernet lighting and control is a gimmick

# Paradigms are Shifting

- Controls
  - What is the best invention in the history of inventions?
    - Mobile Phone
    - The Internet
    - The lightbulb
    - Indoor plumbing
    - The wheel
    - The car

# Paradigms are Shifting

- Controls
  - What is the best invention in the history of inventions?

## The THERMOS!

**AUTOMATED TEMPERATURE  
REGULATED SEALED CONTAINER**



KEEPS HOT  
10 HOURS



KEEPS COLD  
24 HOURS



# Welcome to Controls

- Controls
  - What is the most efficient light?

**The One That is OFF!!!**





KEEPS HOT  
10 HOURS



KEEPS COLD  
24 HOURS



# LSI Controls

- Expectations

- Specification
- Controls Sequence of Operations
- Controls Narrative



**THAT THERE WILL BE LIGHT**

- Controls & Lighting Expectations

- Grocery store parking lot at night
- Conference room at work
- Walking into a hotel room
- Walking into a dark bathroom
- Looking for a refueling station

# LSI Controls

- Lighting Controls – Why?

- Convenience
- Comfort
- Safety
- Savings
- Requirements

- Lighting Controls – What?

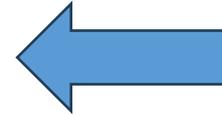
- On
- Off
- Dim
- Scene

- Lighting Controls – How?

- Manual
  - Switch / dimmer
  - App / PC
- Automated
  - Timeclock
  - Motion sensor
  - Photo sensor
  - Integrated trigger

# LSI Controls

User Expectations



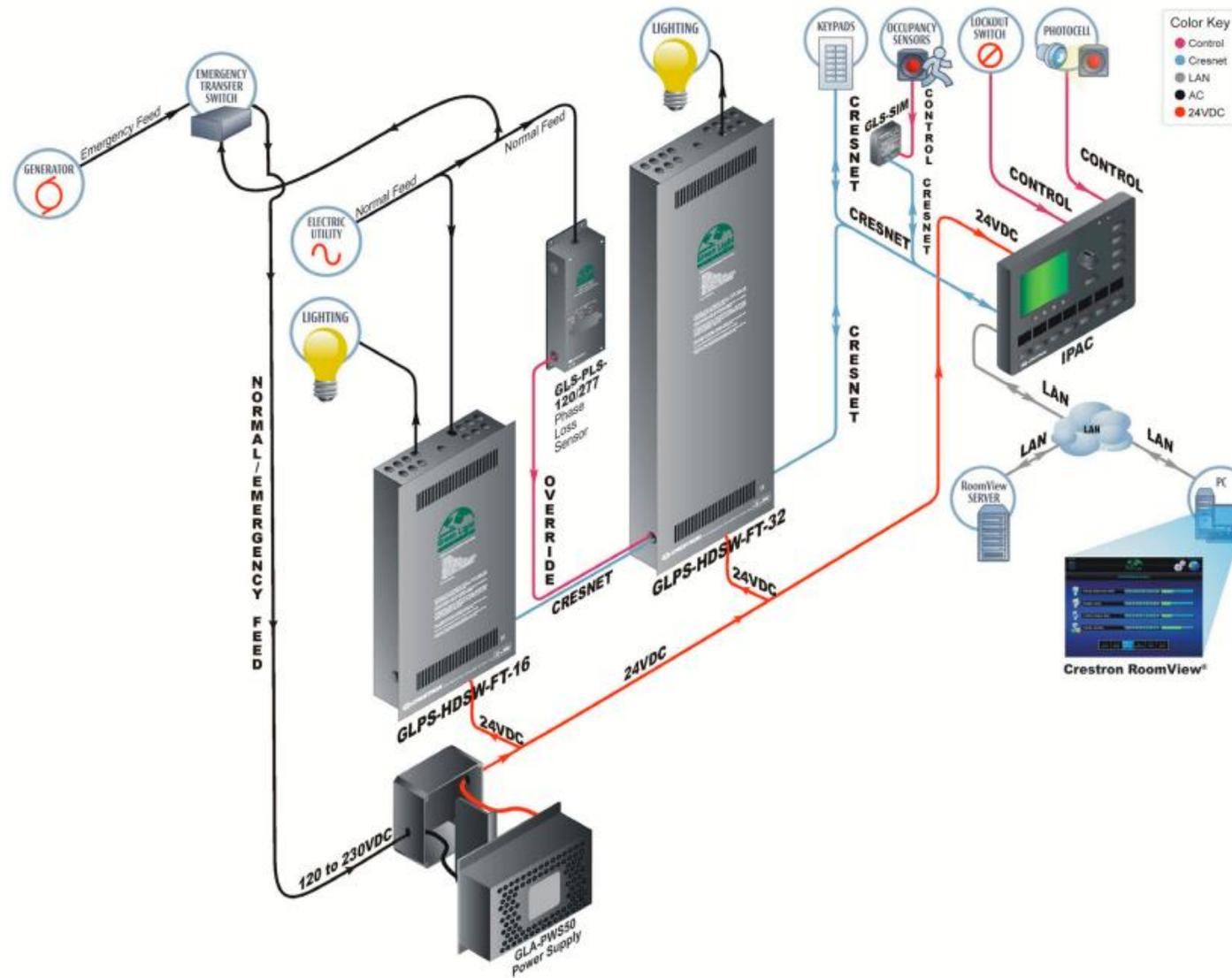
Code Expectations



**Lighting Controls + Automation = Expectations Met**

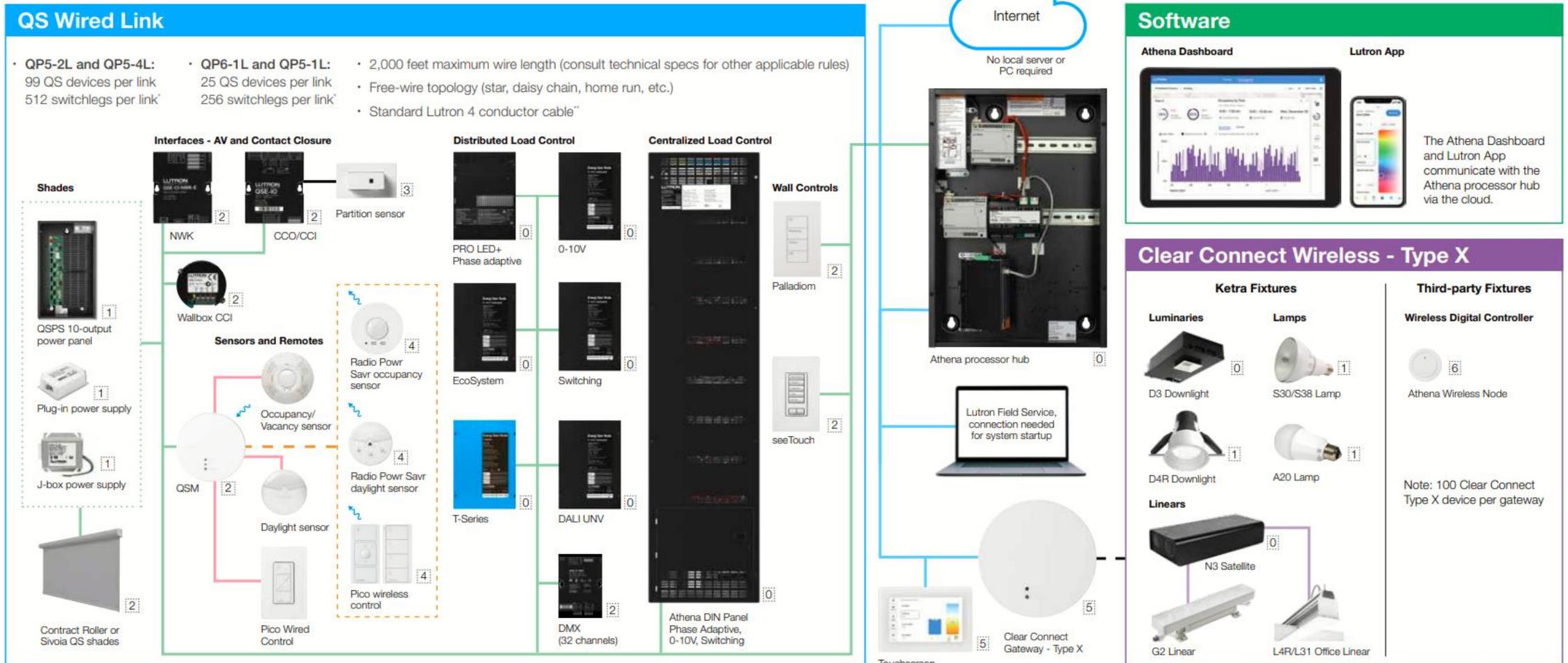
# Controls 101 – Control Types

- Centralized



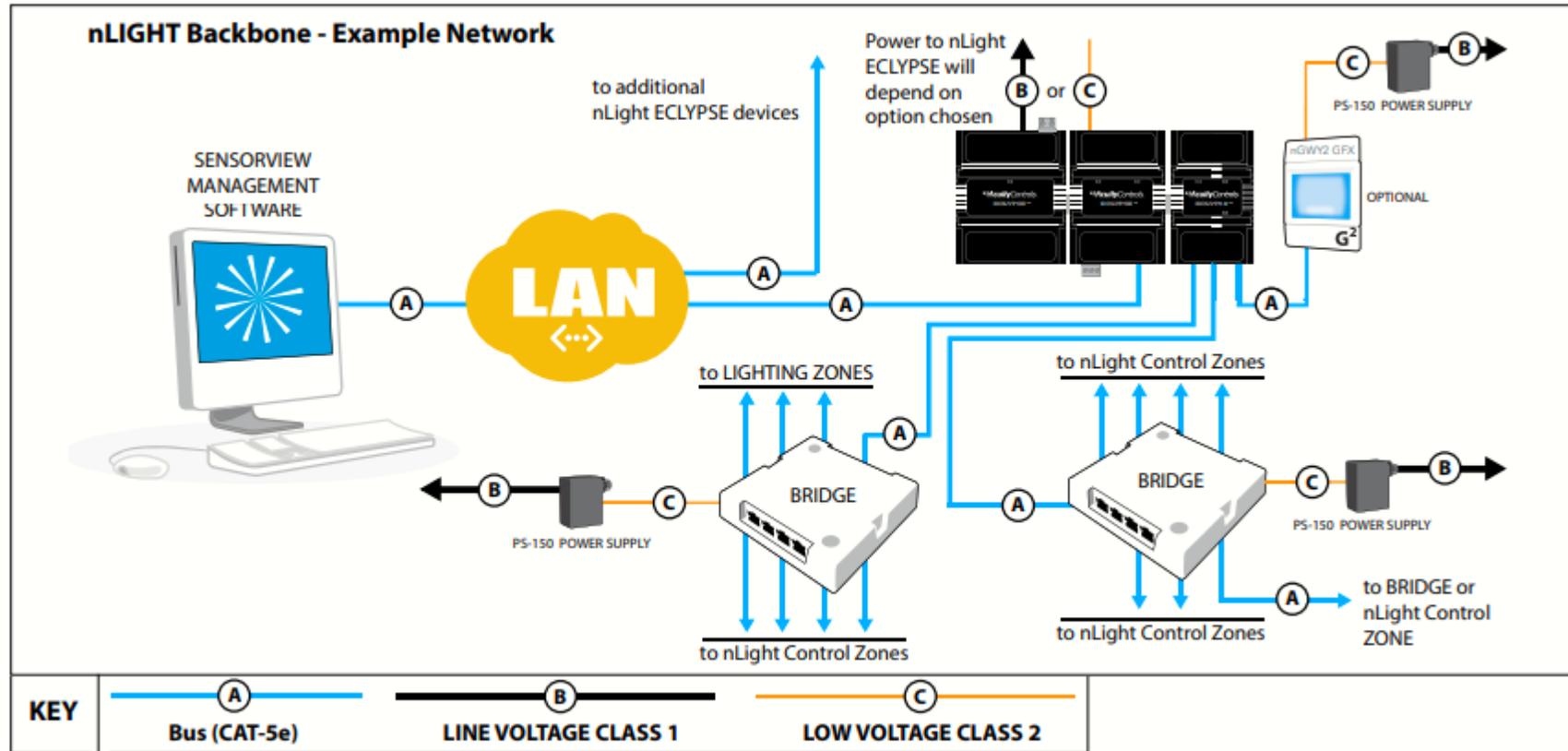
# Controls 101 – Control Types

- **Centralized**



# Controls 101 – Control Types

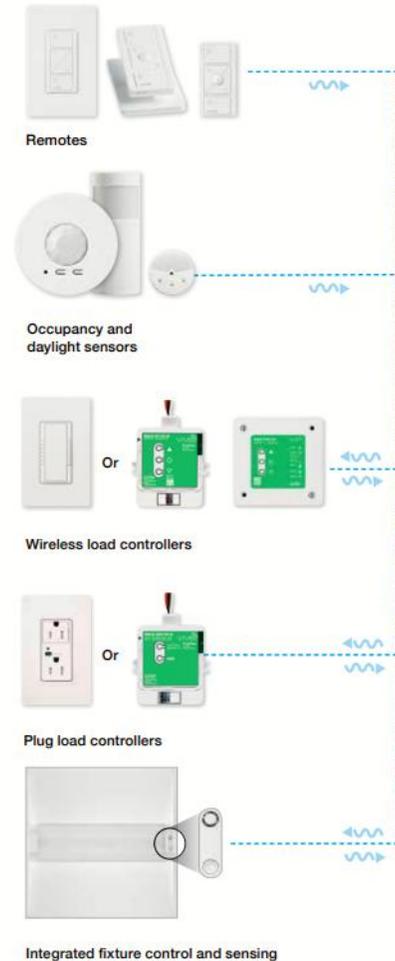
- **Centralized**



# Controls 101 – Control Types

- **Distributed Intelligence**

Flexible, wireless controls and sensors for simple, code-compliant design



Add wireless hubs for centralized control and integration (optional)



Simple-to-use software



Vive software

Communication protocols



Communicate via RF to control components



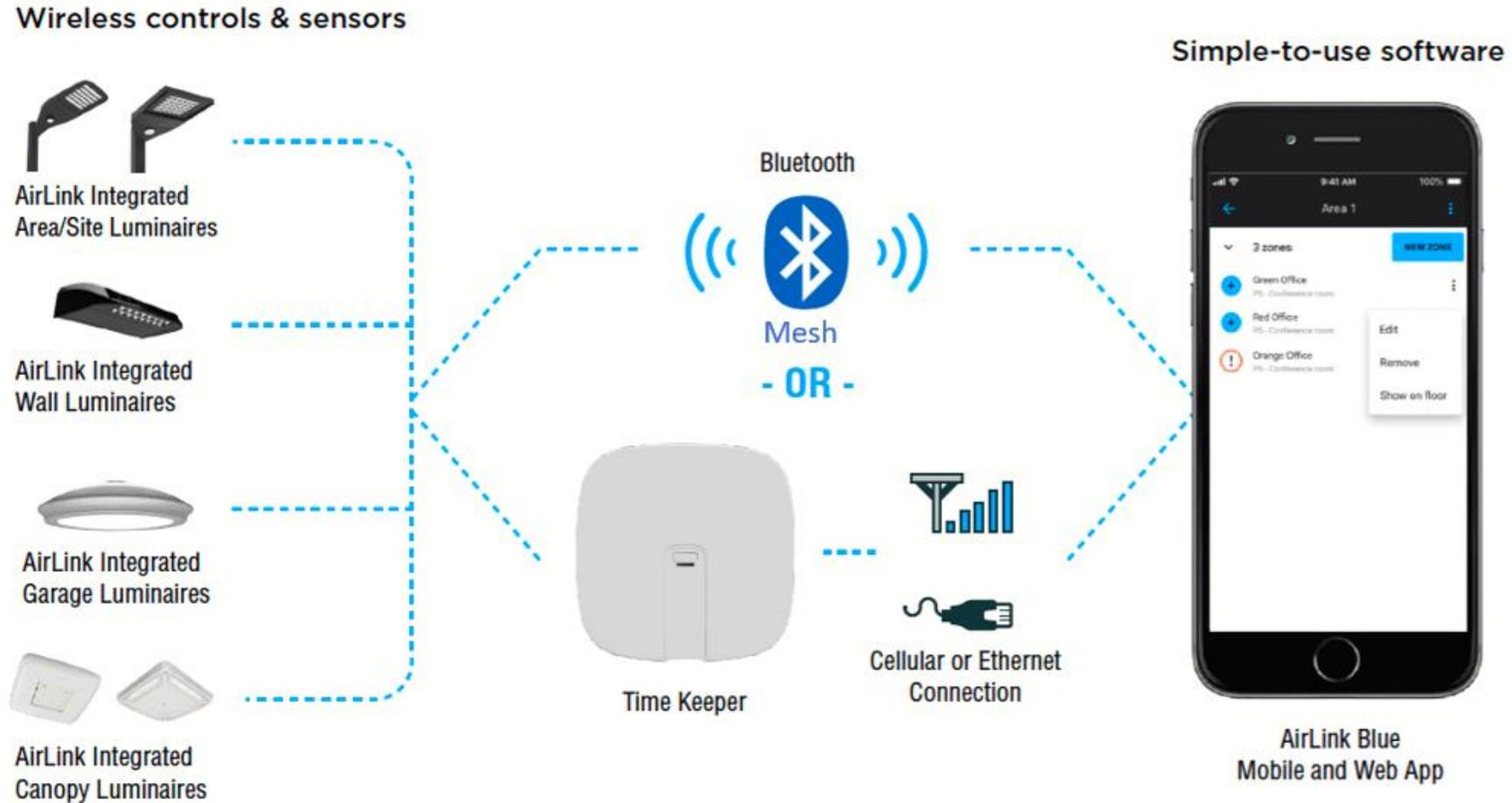
Communicate via WiFi to smart devices



Communicate via wired Ethernet to Vive hub

# Controls 101 – Control Types

- **Distributed Intelligence**



# Controls 101 – Control Types

- **Distributed Intelligence**

## Wireless controls & sensors



Wireless & Override Switches



Occupancy/Vacancy & Daylight sensors



AirLink-integrated Fixtures



AirLink-compatible Fixtures



Circuit & Zone Controllers

## Centralized control & Integration



Site Manager Controller

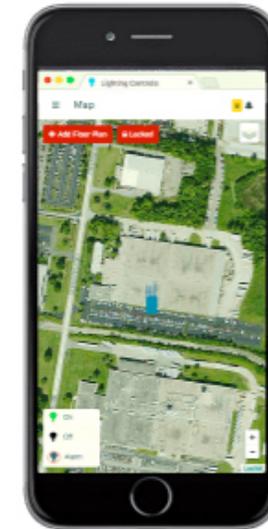


Gateway Module



WiFi, Cellular or Ethernet Connection

## Simple-to-use software



AirLink Site Manager:  
Lighting control web app

# Controls 101 – Control Types

## • Lighting Controls – Why?

- Convenience
- Comfort
- Safety
- Savings
- Requirements

## • Lighting Controls – What?

- On
- Off
- Dim
- Scene

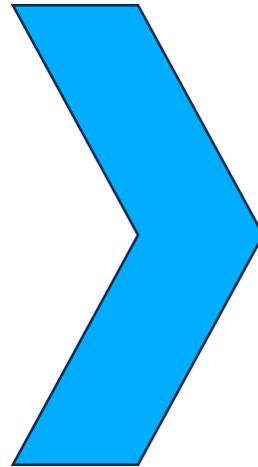
## • Lighting Controls – How?

- Manual
  - Switch / dimmer
  - App / PC
- Automated
  - Timeclock
  - Motion sensor
  - Photo sensor
  - Integrated trigger

# Controls 101 – Control Types

- Lighting Controls

- Simple
- Efficient
- Effective
- Economic
- Agnostic



Scalable Lighting  
Controls Solutions

# Controls 101 – Control Types

- Lighting Controls
  - Scalable Lighting Controls Solutions

**LSI Controls Positioning Guide**  
*Scalable controls solutions*

Linear Flat Panel Troffer High Bay Wall Mount Area Garage Canopy

- Simple and cost effective platforms
- Multiple options available to meet project specifications and code requirements
- Feature rich and competitive solutions
- Internal and external system devices
- Automation strategies with motion, daylight and time-clock controls
- Ability to integrate 3rd party sensors and controls

**Simple Sensors**  
IMS, OMS, QCR

- IMS**
  - Integral Motion Sensor
- OMS**
  - Outbound Motion Sensor
- QCR**
  - Quick Control Receptacle

**Basic Bluetooth**  
IMSBTxL

- IMSBTxL**
  - Integral multi sensor, Blue Tooth, x - Height, L - Lite

**Advanced Bluetooth**  
IMSBTxLS

- IMSBTxLS**
  - Integral multi sensor, Blue Tooth, x - Height, L - Lite, S - Scheduling

**AirLink Blue Bluetooth Mesh**  
ALBCS, QCR

- ALBCS**
  - AirLink Blue Control Sensor
- QCR**
  - Quick Control Receptacle

**AirLink Synapse Wireless Mesh**  
ALSCS

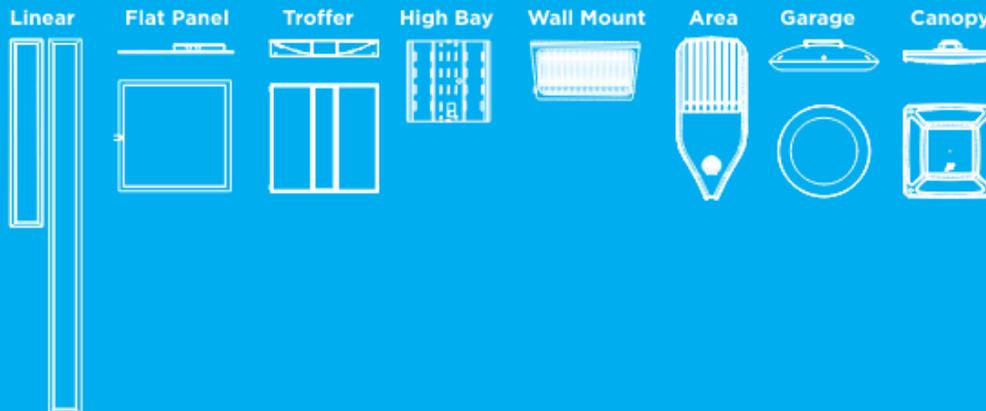
- ALSCS**
  - AirLink Synapse Control Sensor



# LSI Controls Positioning Guide

*Scalable controls solutions*

- Simple and cost effective platforms
- Multiple options available to meet project specifications and code requirements
- Feature rich and competitive solutions
- Internal and external system devices
- Automation strategies with motion, daylight and time-clock controls
- Ability to integrate 3rd party sensors and controls



## Simple Sensors IMS, OMS, QCR



### IMS

- Integral Motion Sensor

### OMS

- Outbound Motion Sensor

### QCR

- Quick Control Receptacle

## Basic Bluetooth IMSBTxL



### IMSBTxL

- Integral multi sensor, Blue Tooth, x - Height, L - Lite

## Advanced Bluetooth IMSBTxLS



### IMSBTxLS

- Integral multi sensor, Blue Tooth, x - Height, L - Lite, S - Scheduling

## AirLink™ Blue Bluetooth Mesh ALBCS, QCR



### ALBCS

- AirLink Blue Control Sensor

### QCR

- Quick Control Receptacle

## AirLink™ synapse Wireless Mesh ALSCS



### ALSCS

- AirLink Synapse Control Sensor

		Simple Sensors	Basic Bluetooth	Bluetooth Mesh	Wireless Mesh
Photo Sensing (on / off based on ambient light intensity)		✓			
Daylight Harvesting (on / dim / off based on ambient light intensity)				✓	✓
Motion Sensing		✓	✓	✓	✓
Quick Control (LSI plug and play socket and sensor system)		✓		✓	
Scheduling			✓	✓	✓
Bluetooth Programmable			✓	✓	
Bluetooth Programmable & Controllable				✓	
Bluetooth mesh				✓	
Bluetooth direct			✓	✓	
2.4 Ghz mesh					✓
App based accessibility			✓	✓	
Browser based accessibility				✓	✓
Grouping / zoning- limited			✓		
Grouping / zoning unlimited				✓	✓
Manual override control devices				✓	✓
Remote Access				✓	✓
Calculated Energy Reporting				✓	
Actual Energy Reporting					✓
Building Management System integration - BACnet					✓
External Wireless Control Modules				✓	✓

# AirLink Blue

## Bluetooth Mesh

ALBCS, QCR

**ALBCS**

- AirLink Blue Control Sensor

**QCR**

- Quick Control Receptacle

### Wireless controls & sensors



AirLink Integrated Area/Site Luminaires



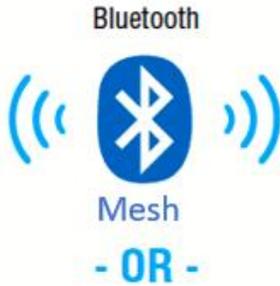
AirLink Integrated Wall Luminaires



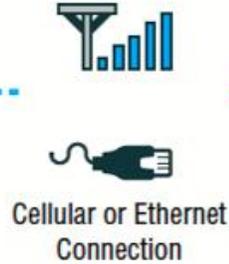
AirLink Integrated Garage Luminaires



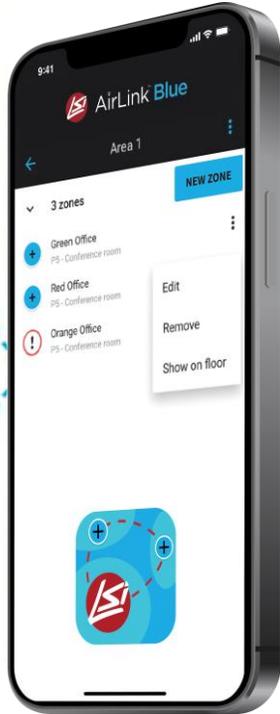
AirLink Integrated Canopy Luminaires



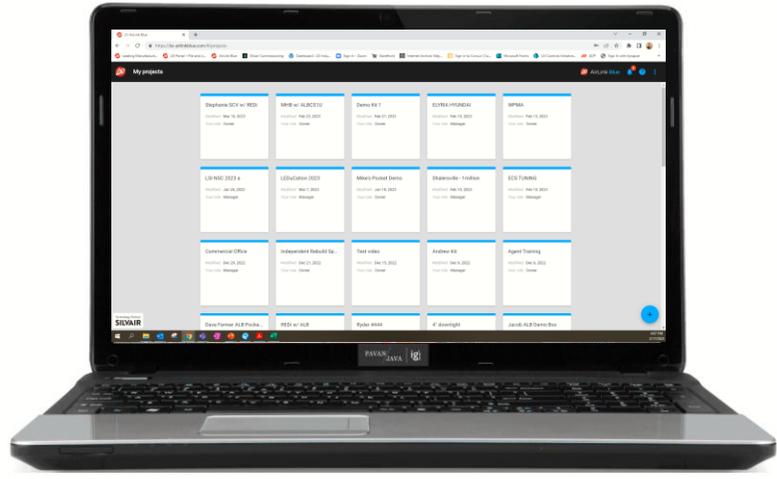
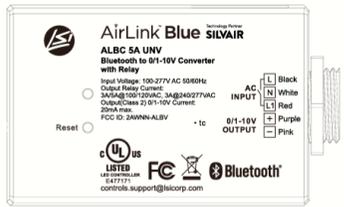
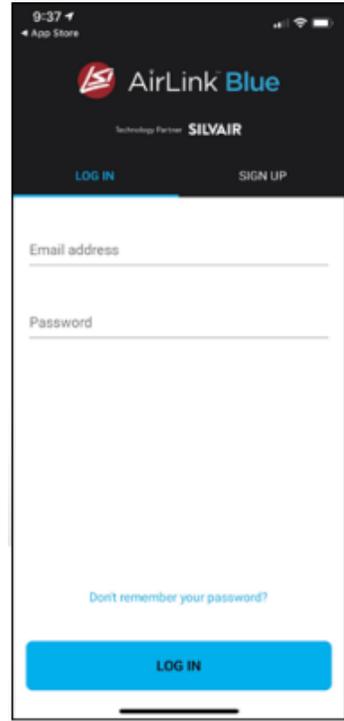
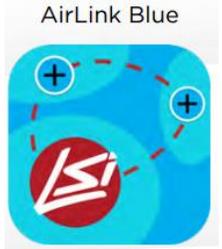
Time Keeper



### Simple-to-use software



AirLink Blue Mobile and Web App



**AirLink™**  
**Synapse**  
**Wireless Mesh**  
**ALSCS**

**ALSCS**  
 • AirLink Synapse Control Sensor

**Wireless controls & sensors**



**Centralized control & Integration**



Site Manager Controller



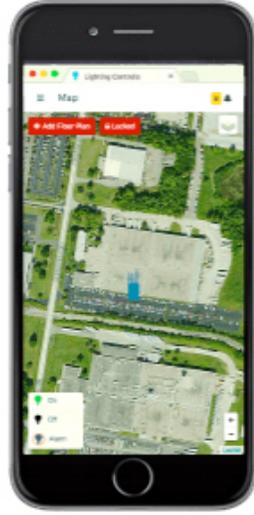
WiFi, Cellular or Ethernet Connection



Gateway Module



**Simple-to-use software**



AirLink Site Manager: Lighting control web app



### Basic Bluetooth IMSBT<sub>x</sub>L

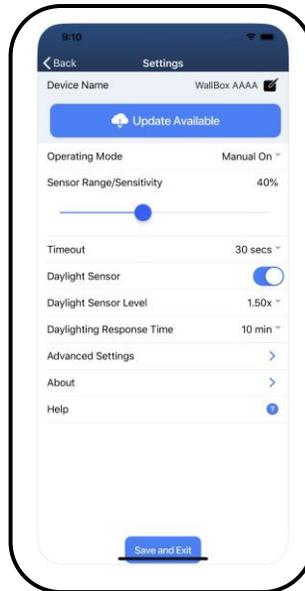
**IMSBT<sub>x</sub>L**

- Integral multi sensor, Blue Tooth, x - Height, L - Lite

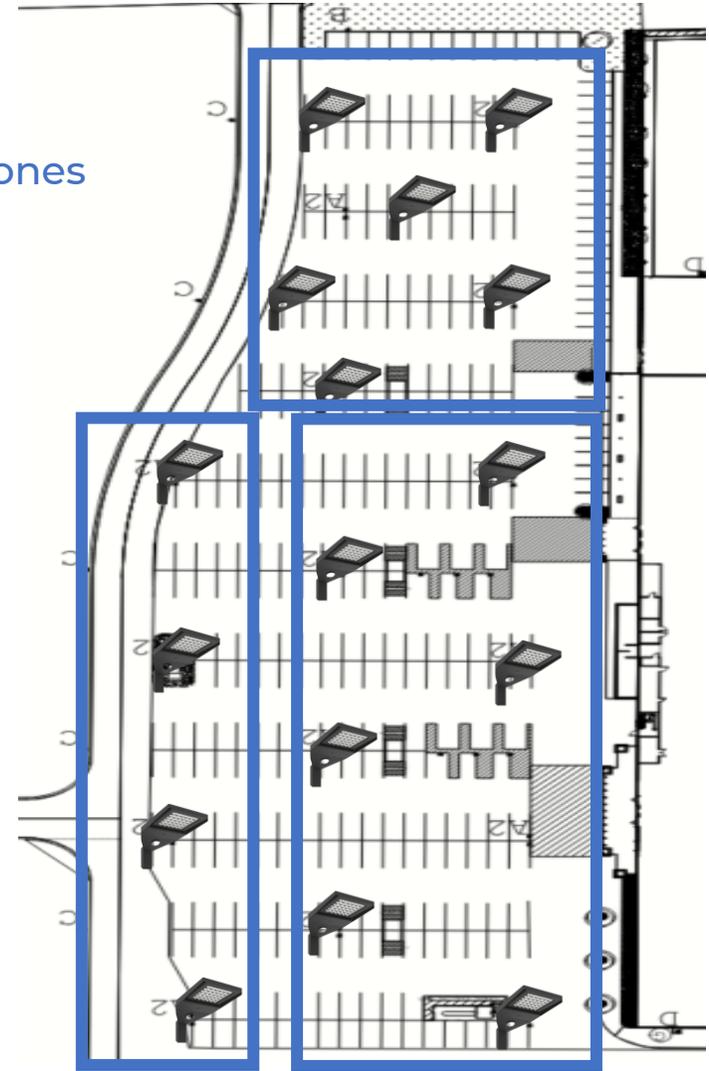
### Advanced Bluetooth IMSBT<sub>x</sub>LS

**IMSBT<sub>x</sub>LS**

- Integral multi sensor, Blue Tooth, x - Height, L - Lite, S - Scheduling



3 Zones



## Simple Sensors IMS, OMS, QCR



### IMS

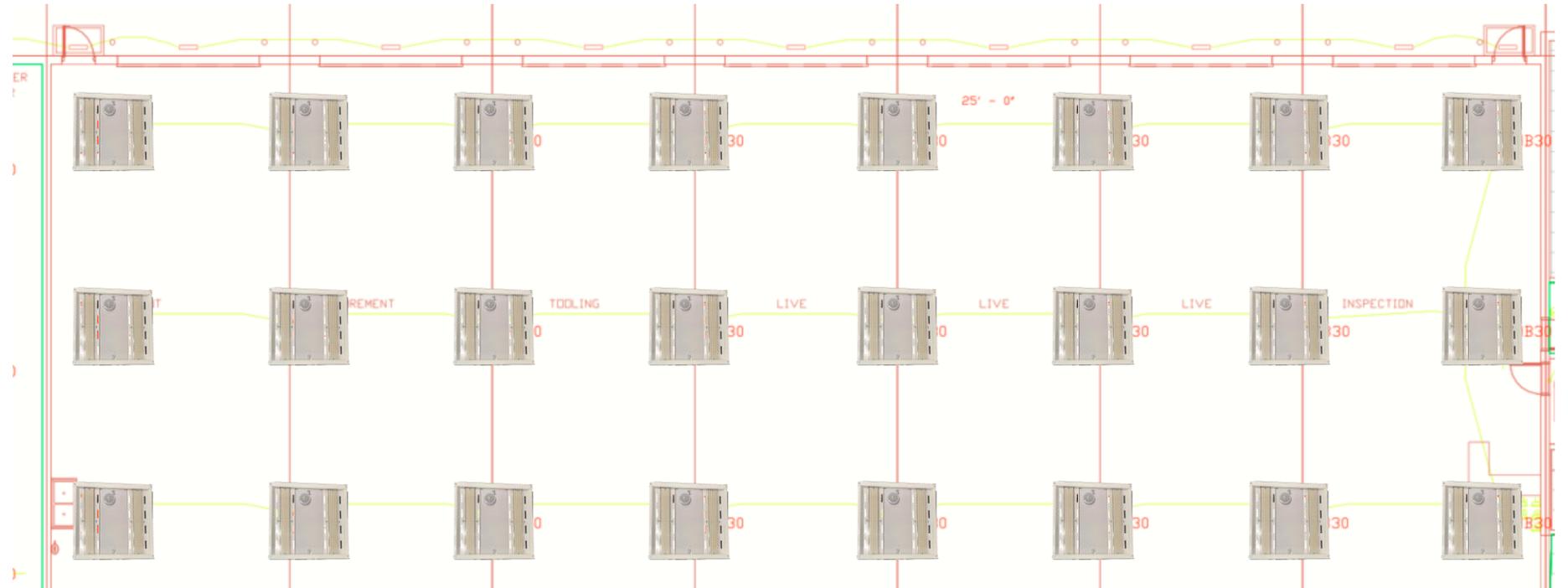
- Integral Motion Sensor

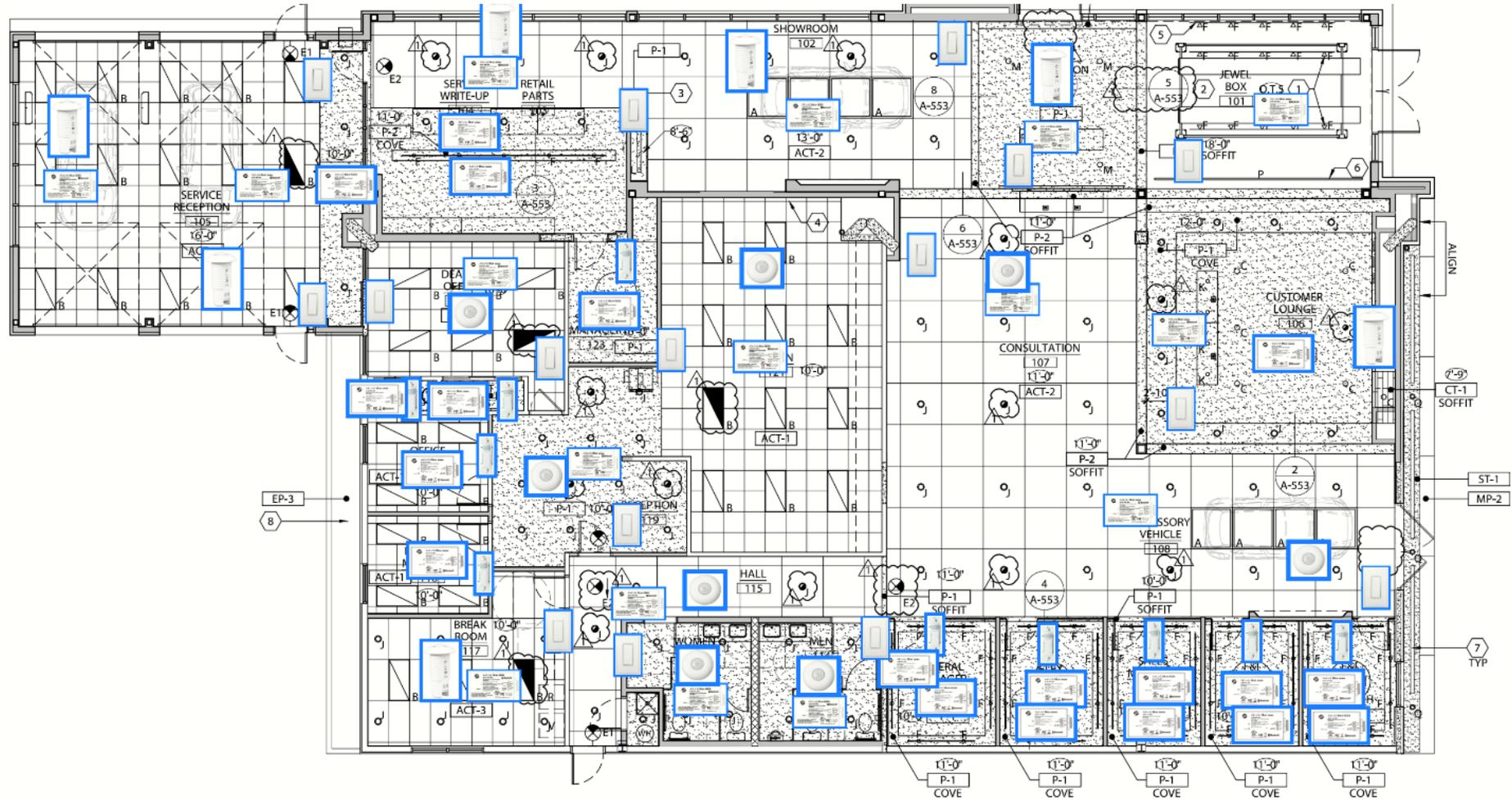
### OMS

- Outbound Motion Sensor

### QCR

- Quick Control Receptacle

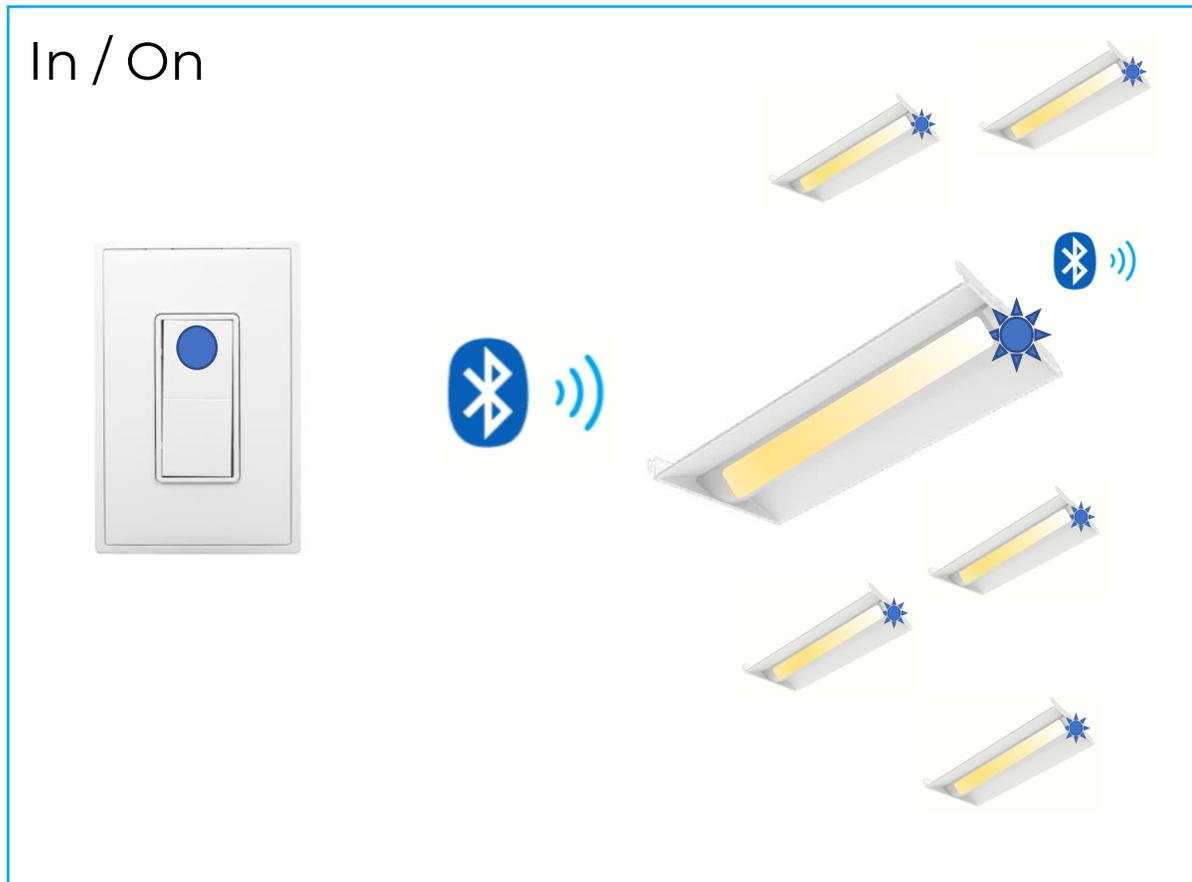




# Controls Strategy

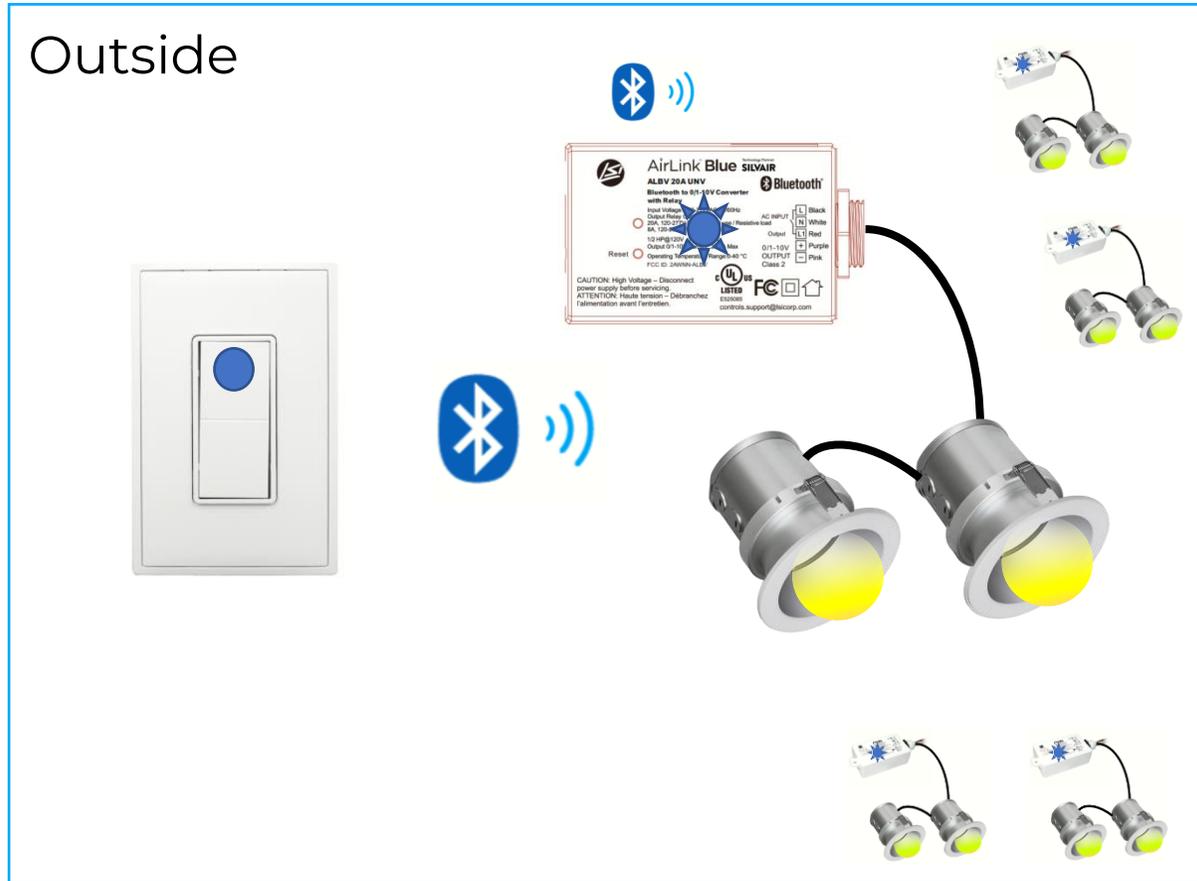
- Scalable controls offering can efficiently, effectively, economically and agnostically integrate controls to meet the requirements for any lighting project with ease.
  - **Efficiently** – we gather all the relevant information to understand the details for the project
  - **Effectively** – we utilize expert engineering to thoroughly test the controls that we integrate
  - **Economically** – we utilize technology to reduce integration cost
  - **Agnostically** – we are open to working with and integrating controls from any manufacturer
  - **Ease** – we strive to simplify controls integration; make it easier to promote, design, install and sell

# Controls Recap



# Controls Recap

Outside



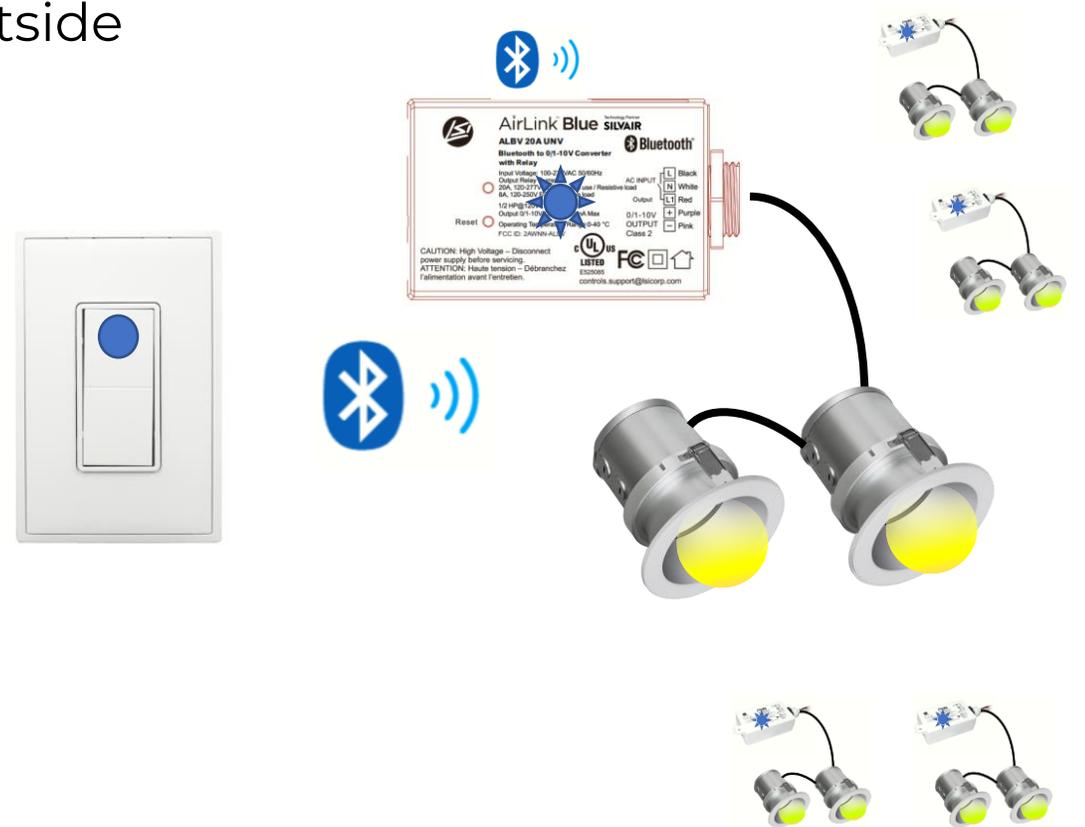
# Controls Recap

- Why?
  - Receive all the benefits of AirLink Blue controls utilizing any fixture desired
    - The preferred LSI fixture is not available with integrated inside AirLink Blue sensors or controllers
    - Other manufacturer fixtures require AirLink Blue control

In / On



Outside



# How Do We Win With Controls?

## **Don't Over Complicate It!**

- Controls are everywhere
- Controls are easy
- Controls are expected
- Controls are required

# How Do We Win With Controls?

**Work with a company that can deliver!**

- Ability to meet expectations!
- Scalable options
- Differentiation in design
- Agnostic partnerships
- Ease of Use
- Expert support

# LSI Lighting Controls

## Questions?



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