Agenda

• Context

• Overview of 4 topics to explore today

• Discussion time at each table, w/ scribe & presenter

• Report out from each group, & brief room discussion
<table>
<thead>
<tr>
<th>Demonstration Projects</th>
<th>5 in progress, 4 more starting</th>
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</thead>
<tbody>
<tr>
<td>Spec &amp; QPL</td>
<td>QPL published Q2, growing Q3</td>
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<tr>
<td>Training Programs for</td>
<td>• Draft Curriculum for Installers Q3</td>
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<tr>
<td>Designers and Installers</td>
<td>• Deployed by select member utilities Q3-Q4</td>
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<tr>
<td>Control Savings</td>
<td>• BETA V3 progress in Q4</td>
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<tr>
<td>Calculator</td>
<td>• Phased deployment to DLC Members 2017</td>
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<td></td>
<td>• Wider market in 2017 and beyond</td>
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<tr>
<td>Nationally-Adopted EE</td>
<td>• Initial offerings Q3</td>
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<tr>
<td>Program Offerings</td>
<td>• Deployed by select member utilities Q3-Q4</td>
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</tbody>
</table>
### 'Required'
- Networking of Luminaires and Devices
- Occupancy Sensing
- Daylight Harvesting
- High-End Trim
- Zoning
- Luminaire and Device Addressability
- Continuous Dimming

### 'Reported'
- Type of User Interface
- Luminaire Level Control
- Integrated Luminaire Level Control
- Localized Processing/Distrib. Intelligence
- Scheduling
- Personal Control
- Load Shedding (DR)
- Plug Load Control
- BMS/EMS/HVAC Integration
- Energy Monitoring
- Device Monitoring / Remote Diagnostics
'Required' System Capabilities

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Networked Lighting Controls Revision Cycle

Specification Revised Annually every June 1

Revision process begins every February to allow time for stakeholder input

*One Year Grace Period*
Annual Updates with 1 Year Grace Period

• Revision in Spring 2017 (today’s session is kick-off)

• June 2017
  – meet new 2017 spec
  – Or, if already qualified w/ 2016 spec, renew once for 1 year

• June 2018
  – meet new 2018 spec
  – Or, if already qualified w/ 2017 spec, renew once for 1 year
System Capabilities vs. Individual Projects

• The product must support each required capability, to be listed on the DLC NLC QPL

• How each individual project implements each capability (or not) may vary by utility program

• DLC may develop guidance with recommendations
4 Tables, 4 Topics

• Introductions to all 4 topics
• Discussion time at each table, w/ scribe & presenter
• Report out from each group, and brief room discussion
Potential New “Required” for 2017

• Luminaire Level Control (LLC), & (?) Integrated LLC
• Localized Processing / Distributed Intelligence
• Energy monitoring (GUI, API, CSV, other...)
Other Potential Changes for 2017

• Develop requirements for Exterior applications?
• Security? (e.g. GSA GPG)
• Others?
• (Note, other potential changes include these topics being addressed by other sessions today)
  – Color tuning?
  – Attributes of DC / POE lighting?
Require LLC Capability?

Why?

- **Simpler**: Design, Installation, Commissioning, Code compliance for daylight and occupancy, Rezoning, etc.
- Potential additional energy savings

Integrated?

- Luminaires available with integrated controls plus sensors (daylight & occupancy)
- Gateway to Non Energy Benefits from networked sensor data, to drive market transformation

Issues to Address?

- Capability vs. individual project
- Bank of lights with a single sensor-control point, e.g. tracklights
- Power over Ethernet (PoE)
- Cost: higher per luminaire vs easier per system
Require Localized Processing / Distributed Intelligence Capability?

Why?
• Better system performance with lower latency
• Improves reliability / persistence of savings
• Requests from some utilities

Issues to Address?
• Exceptions for downlights, POE, etc.?
• Cost: higher per luminaire vs easier per system
Require Energy Monitoring Capability?

Why?

• Ongoing incentives for reliable energy savings

• ASHRAE 90.1-2013 Code
  – Some energy monitoring requirements
  – 5 states now, more coming in 2017

Issues to Address?

• Standby power

• System capability vs. individual project installation (per utility)
Considerations for 2017 “Required”

• Pros and cons of Requirement?
• Priority for utility programs?
• Can be clearly defined, tested, documented, sold?
• Affordable?
• Enough products are available by June 2018?
• Exceptions and/or precise definitions needed?
• System capability vs. individual project installation (per utility)
Add exterior applications?

Why?
• Some interior control systems include outdoor area lighting
• Need expressed by some utilities and manufacturers

Issues to Address?
• Smart city standards are evolving rapidly
• Most exterior occupancy sensors do not meet exterior pole spacing
• Include site and parking but not roadway?
Discussion

- Scribe to record key points for each group
- Presenter to report out to larger group
Report Out

- 2 minutes per group
- A few minutes for group discussion
Thank you