



STAKEHOLDER MEETING 2018

July 9 - 11 • Boston, MA

Component & Module Qualification

Discussion Session

Moderators



**Paul
Ayers**
DLC

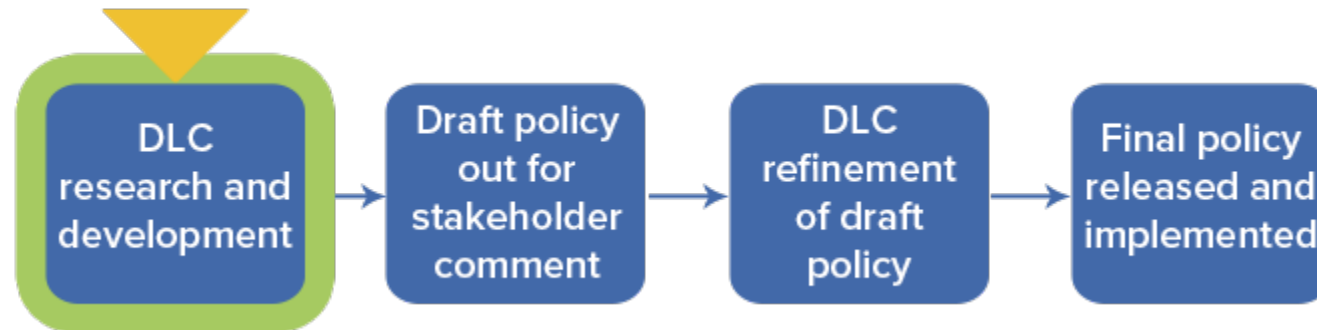


**Liesel
Whitney-Schulte**
DLC

Format

- Open Discussion – share what you are comfortable sharing
- Keep Discussion Topics within scope please
- Allow Everyone's comments to be heard

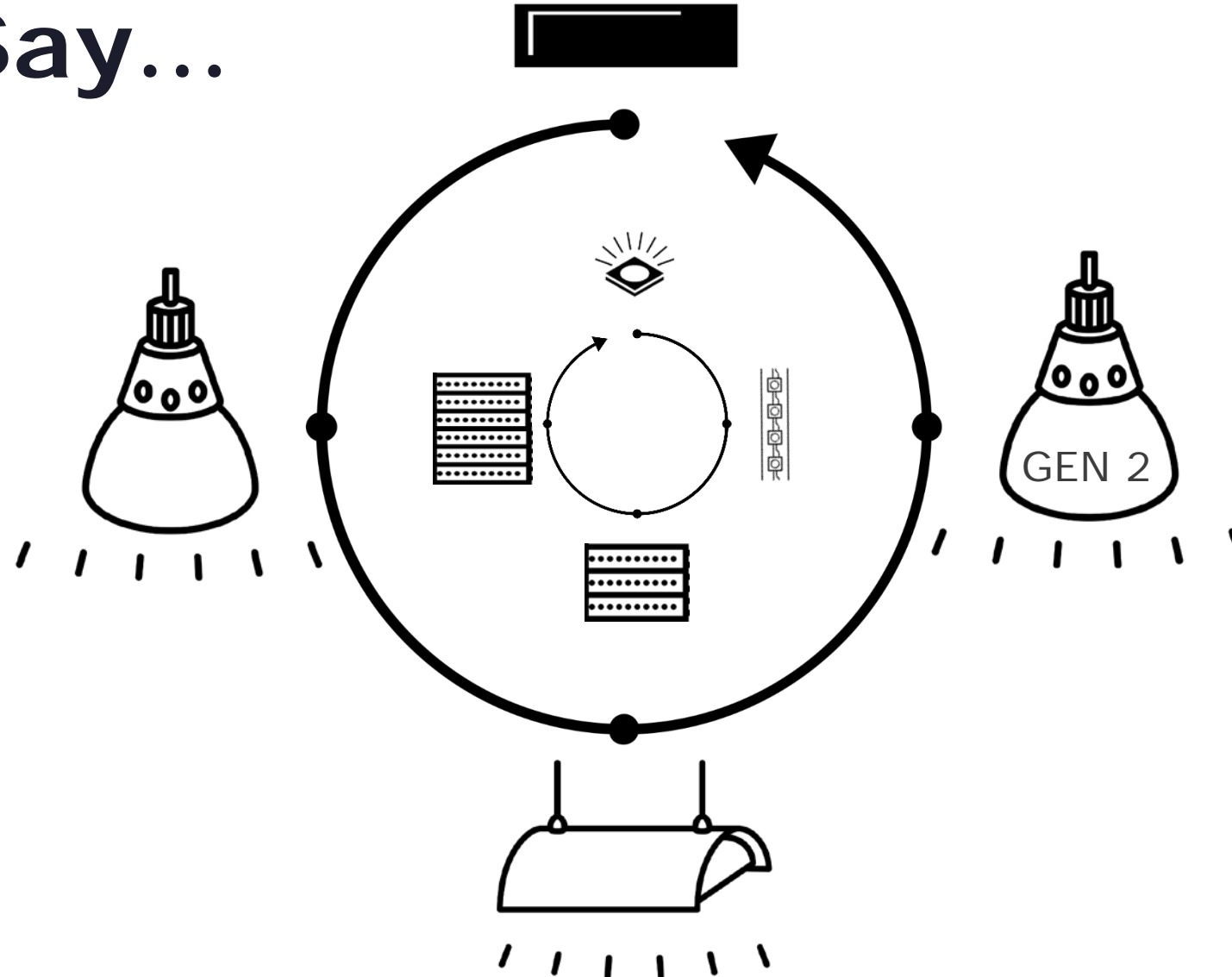
WE ARE HERE



Background

- Over time, the way in which industry manufactures and upgrades product lines has changed.
- Stakeholder comments indicate an interest in an approach that would allow for the qualification of subcomponents (such as drivers, light engines, optics, etc.) and the qualification of more modular, scalable lighting solutions.
- Modular design drives simplification in the supply chain unlocking opportunities for field serviceability, reuse, scalability and upgradability.

Let's Say...



Opportunities

Product
Upgrades

New Product
Design

Dual Sourcing

Field Service

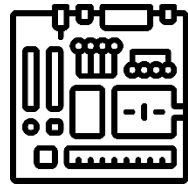
Goals

- Reduce review times where we can, and leverage what we already know about components that may be reused across multiple product lines or families
- Support design of products that have serviceable and/or replaceable parts
- Leverage standardization that occurs in the industry for improved DLC experience
- Preserve the value of our qualification and validation process

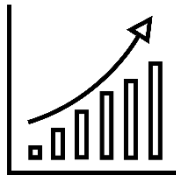
Scope of Discussion



Benefits to
DLC
Stakeholders



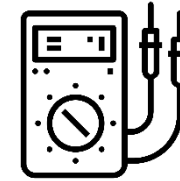
Definitions of
Module and
Component



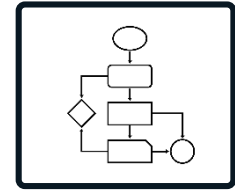
Market
Trends



Industry
Standards

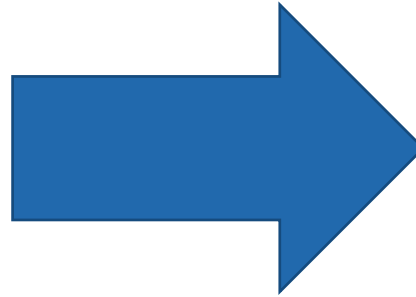
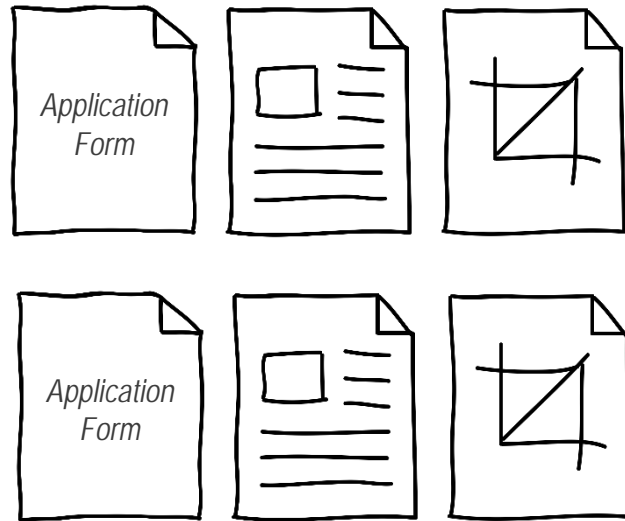


Testing and
Analysis
Considerations



Application
Process
Impacts

Potential Direction 1



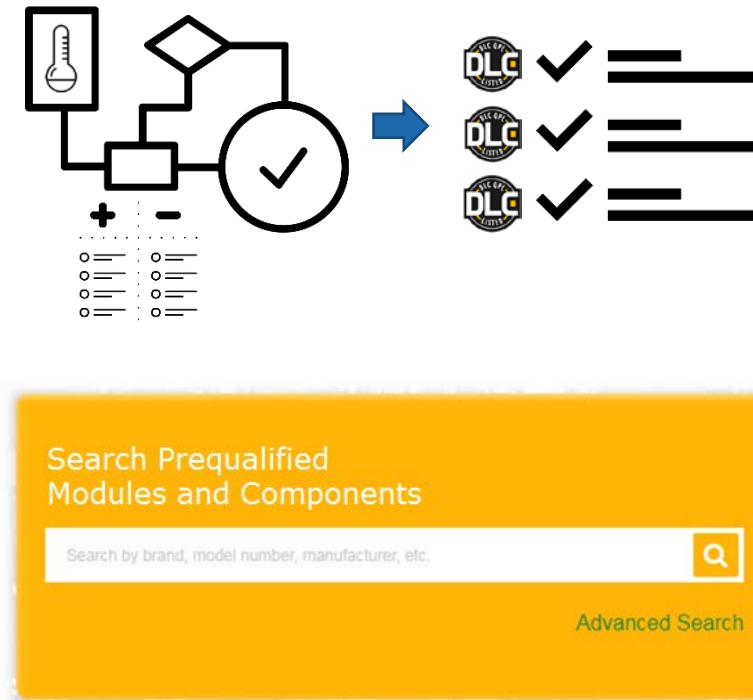
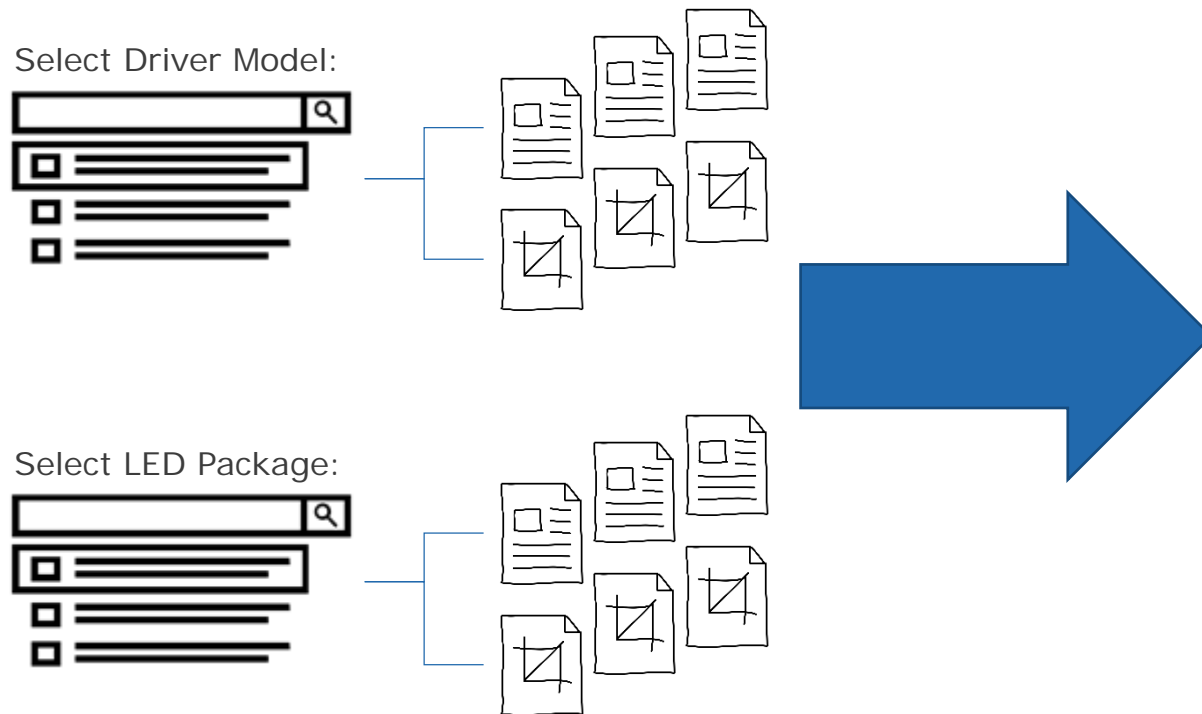
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Select LED Package:



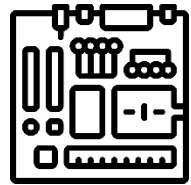
Potential Direction 2



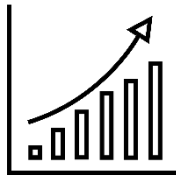
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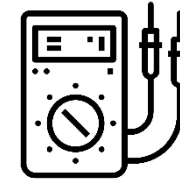
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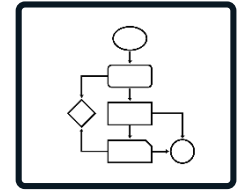
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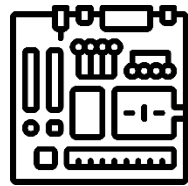


Application
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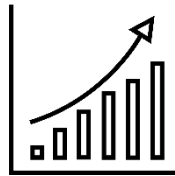
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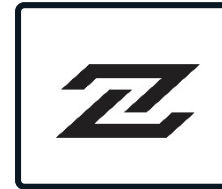
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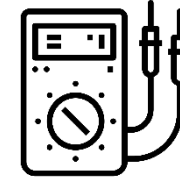
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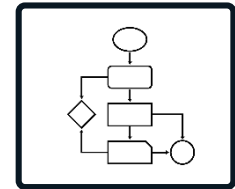
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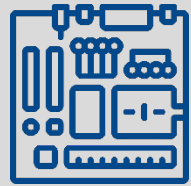


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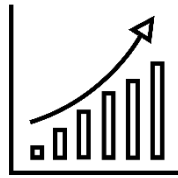
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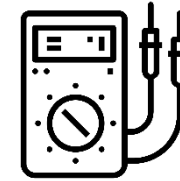
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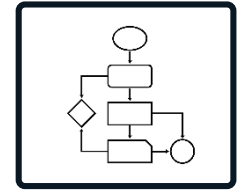
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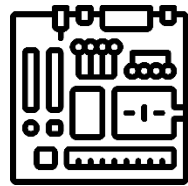


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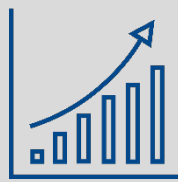
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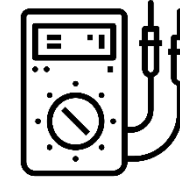
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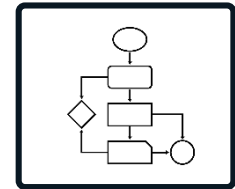
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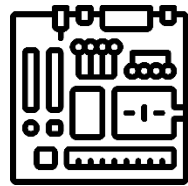


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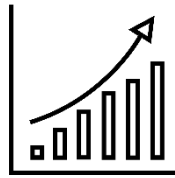
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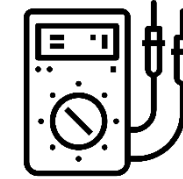
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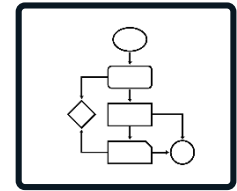
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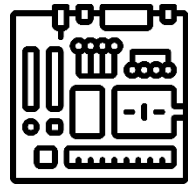


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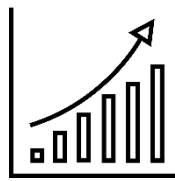
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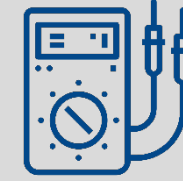
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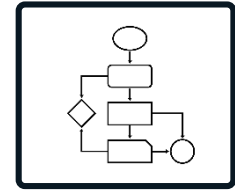
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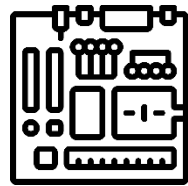


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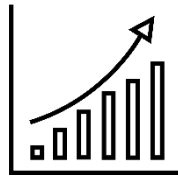
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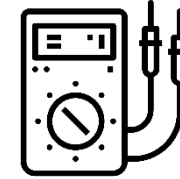
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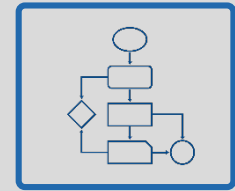
Market
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Testing and
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Application
Process
Impacts

Key Questions



Benefits to
DLC
Stakeholders

Do these benefits matter for manufacturers?

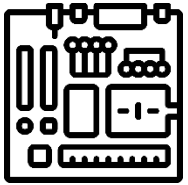
Would it be beneficial to expose this data externally in a publicly searchable database – such as the QPL is today, that could be leveraged by anyone who looks at it? We would not show which products use what, only what components are on the list and in our system already.

What impact do manufacturers feel should come from this? What is the expectation of reduction in review scrutiny or time? Is there an expectation of reduced cost?

Would there be a benefit to pre-qualifying components? Would that play a role in component selection in the design process at all?

Are there some negative downstream impacts to consider? What could go wrong with this sort of thing?

Key Questions



Definition of
Module and
Component

We would like to start by identifying the general purpose major subassemblies within an SSL product – ie the driver, the light engine/module, the LED package, the optics and the housing.

What about controls, sensors and other interfaces that provide non-light benefits.

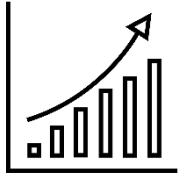
Is there benefit to going more granular or is this the right “altitude” to begin our research?

If we were to pilot or begin with only one of these subassemblies, what would be the most beneficial and why?

We would like to explore the benefits of each of the subassemblies and discuss the benefits for manufacturing / supply chain.

What components are likely to become more standardized over time – are we aligned with the horizon?

Key Questions



Market Trends

Are serviceable luminaires a reality? What else needs to happen before manufacturers step into this world?

What about lamps and retrofit kits? Are these firmly in the “rip and replace” category?

Which categories of products might make use of serviceable or replaceable parts? It seems that this benefit would be strongest on exterior products such as floods, area lights and wallpacks as well as bollards and other landscape lighting where the fixtures serve a key role in the design of the space.

Key Questions



Industry
Standards

Zhaga – does the physical interface standardization help at all with performance standardization? what does this mean for manufacturing and supply chain? Where is the benefit gained and is there a place for DLC to leverage some of the benefit and pass it on through the review process?

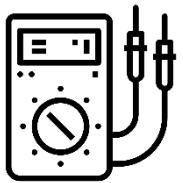
UL Class P Driver program – can we leverage?

Unlike the lamp world, there are no physical standards for products – what else could help us leverage standardization of components?

Where does equivalency of successor or like/dual sourced fit into this? Is there existing school of thought on defined criteria for all equivalency characteristics for sub assemblies?

What work could help accelerate this (things happening in IES, IEC, UL, ANSI, NEMA, etc) are there things that we could be aware of that may help to drive some of this in parallel?

Key Questions



Testing and Analysis Considerations

Do we test components/modules specifically, or leverage testing from the first qualified product using the component, and then allow for extrapolation or applicability of the original testing?

What would be an appropriate level of testing scrutiny placed on the components in order to pre-qualify them for additional or wider range of use?

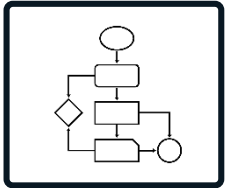
Is there some manufacturing/engineering component qualification best practices that we could leverage or align with as part of this effort?

Are there tests that are happening today as part of the normal engineering process that we could make use of instead of requiring a separate testing effort?

Are there some generally accepted testing principles – or should DLC define testing methods or work with the IES TPC to define specific methods? (UL 8750)

What are the risks associated with testing?

Key Questions



Application
Process
Impacts

If the application process required selection of components from a prequalified list – OR you had to input manually some details about the component (basically registering it into the system) what impact would this have?

What is the biggest concern that comes to mind during this discussion about impacts to the application process or review process?

Do manufacturers feel like there are tangible benefits here that would outweigh the growing pains?