

PoDL for Lighting

Matthias Wendt, Lennart Yseboodt

Philips Research

September 2014

The Philips Lighting view on PoDL

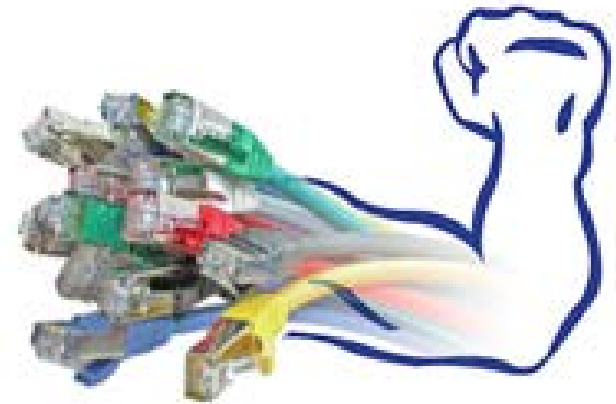
Why we like PoE so much for future lighting systems and why we are hesitant embracing PoDL:

- What is so attractive in PoE for Lighting
- How do these points change with single pair Ethernet and PoDL
- Opportunities and threats



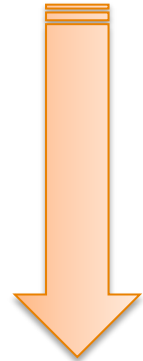
What was so attractive in PoE for Lighting

- At 802.3at **power levels** many LED based lighting applications became feasible
- A **huge market** of available PSEs of various port count and power levels
- RJ45 **well known world-wide**
- Low cost high quality **pre-manufactured cables** available
- Installation for **IT in buildings** is common practice
- Cabling in the ceilings without conduits allowed in US **building codes**
- Integration with IP data connectivity inline with trend towards **smart lighting** systems and building automation



How do these points change with single pair Ethernet and PoDL

- Industry eco system:
 - ✔ huge, engineered systems are dominating, power is integral part
 - ✘ dominated by automotive → will need to start for building
- Building codes:
 - ✘ single pair PoDL is unknown, higher power beyond UL class 2 may lead to conduit base wiring requirements
- Cables:
 - ✔ optimized for power: may offer even higher power beyond UL class 2, no heating problem, low losses
 - ✘ no pre-manufactured cable market → all automotive cable harness is engineered
- Connectors:
 - ✔ optimized for power will offer high longevity, reliability at long unchanged installations, polarity aware installations
 - ✘ unknown connectors, no building optimized connectors out, market development unclear



Opportunities and threats

For Lighting systems efficient power transport, dependability and longevity are crucial

→ an automotive focused standard optimized for this will on the long run also enter Buildings

PoDL may support other wiring topologies than star-net

→ Busses and Daisy-Chaining are common wiring topologies for modern lighting installations.

However, automotive technology will not automatically be adopted in building installations

→ Finding an industry community building up the new ecosystem will be the most important factor for success

