



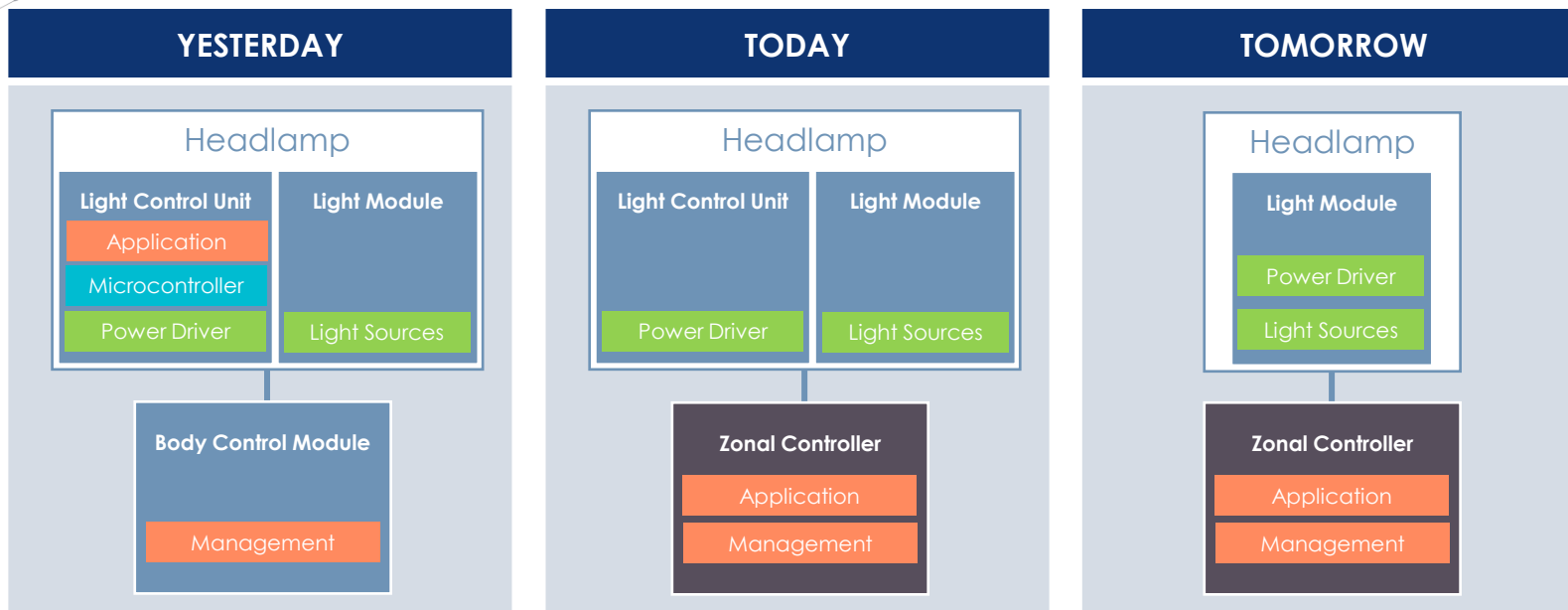
THE SMART WAY TO AN LDM-LESS HEADLAMP

Andreas Schramm

DVN MUNICH WORKSHOP | February 5th 2026

The Evolution of E/E architecture

From distributed to LDM-less

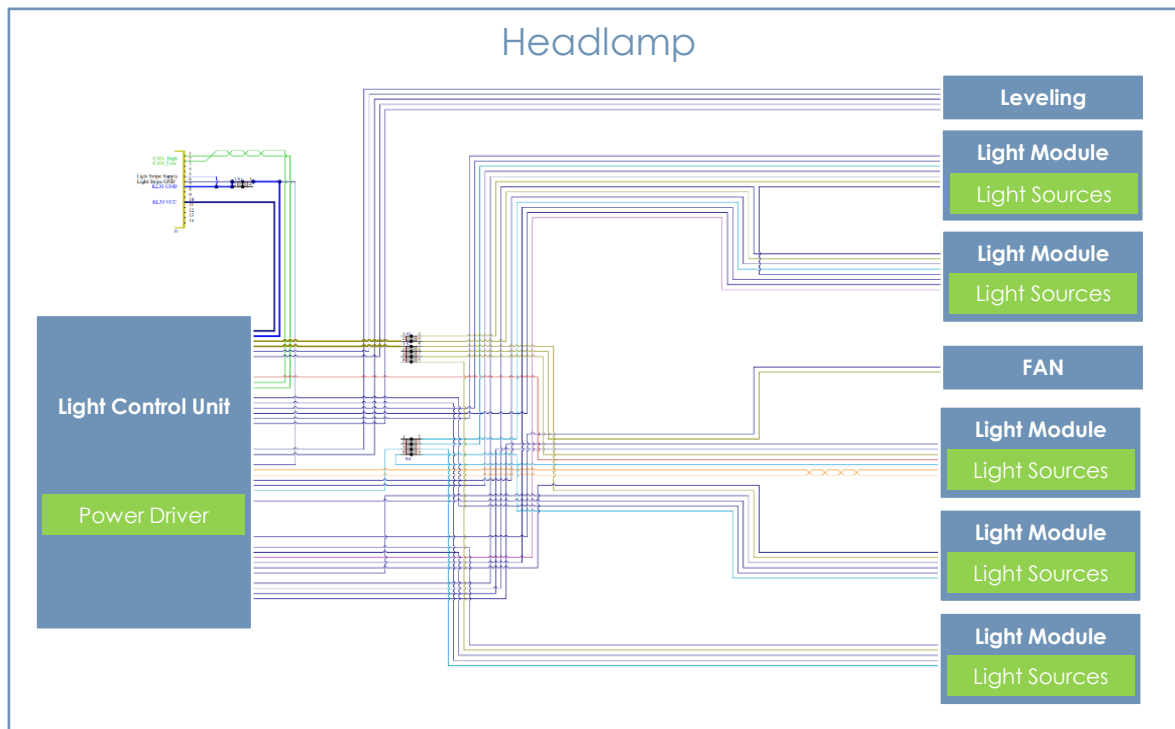


TODAY: MCU-less architecture

Real world example

BENEFITS

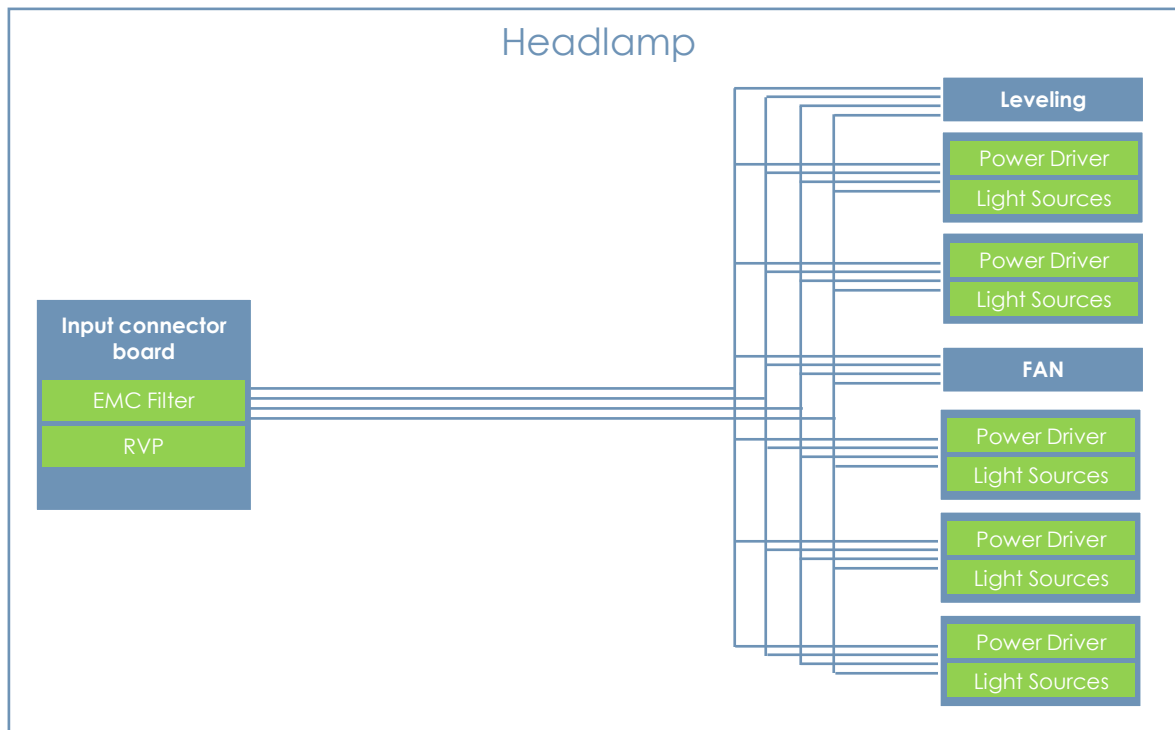
- Hardware-software decoupling allows true SDV capabilities
- BOM and development cost reduction



TOMORROW: LDM-less architecture Outlook

BENEFITS

- **Scalable:** Modular hardware approach
- **Simplified:** Standardized wiring with data and power lines



Conclusion



The future of
smart light
control begins
now

Taking MCU-less architecture to the next level with modular and scalable hardware:

- Lower system- and development costs
- Reduced time-to-market
- Pre-validated light modules that can be used plug-and-play

Next challenges:

- Power dissipation inside the head lamp housing
- Repairability



Thank You

Andreas Schramm
Innovation Product Manager – Electronics
andreas.schramm@opmobility.com