

Sense the power of light

ams OSRAM

Novel Intelligent LEDs for Highly Scalable Dynamic Exterior Lighting

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Introduction

- Trend towards advanced lighting Solutions:
 - Spanning large Areas (e.g. Horizontal Taillight, Front Grille, ...)
 - Dynamic Lighting (e.g. Fading/Glowing, Running Light, Communication e.g. Car2X, ...)



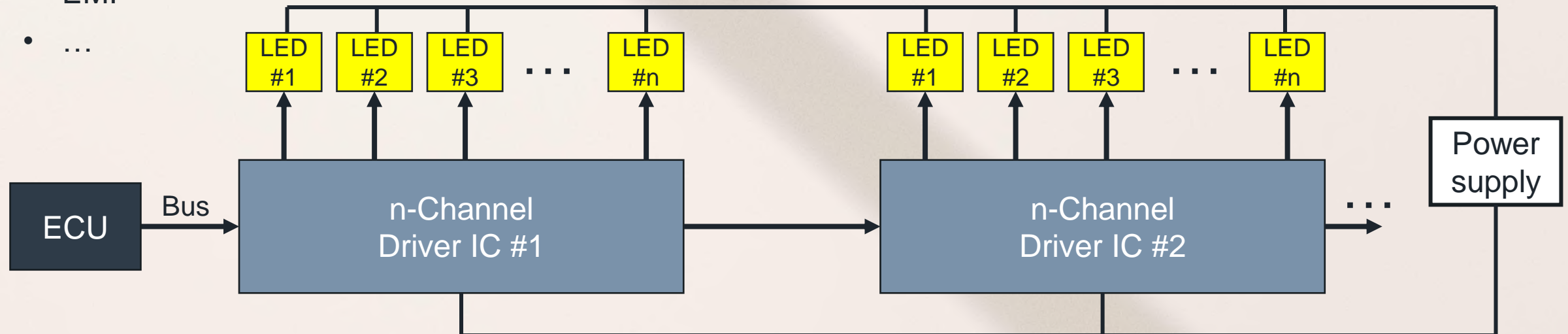
Problem / Motivation

State of the art approach:

- Using dedicated Multi Channel Drivers

Problems:

- Complexity of Connection
- Heat Distribution
- EMI
- ...



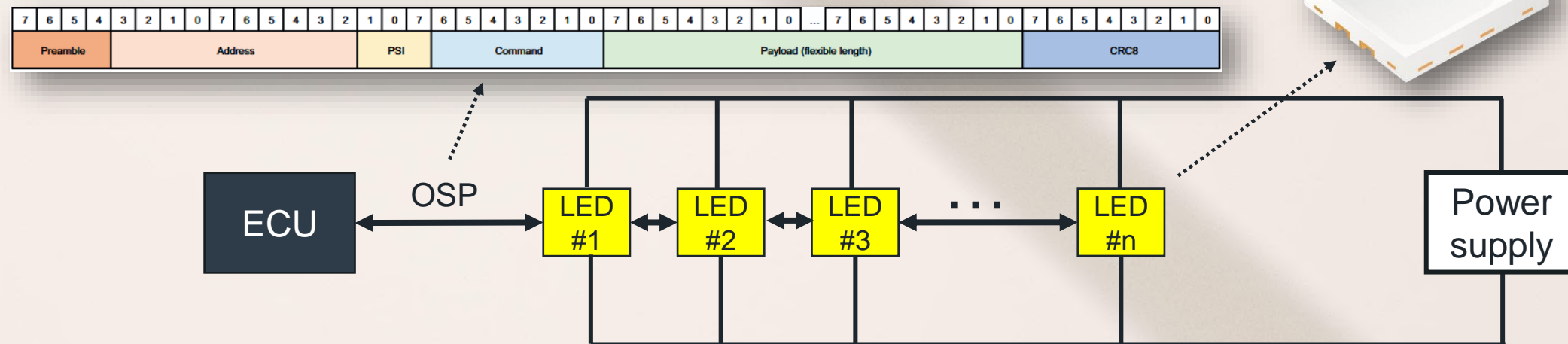
Solution

What could be done better?

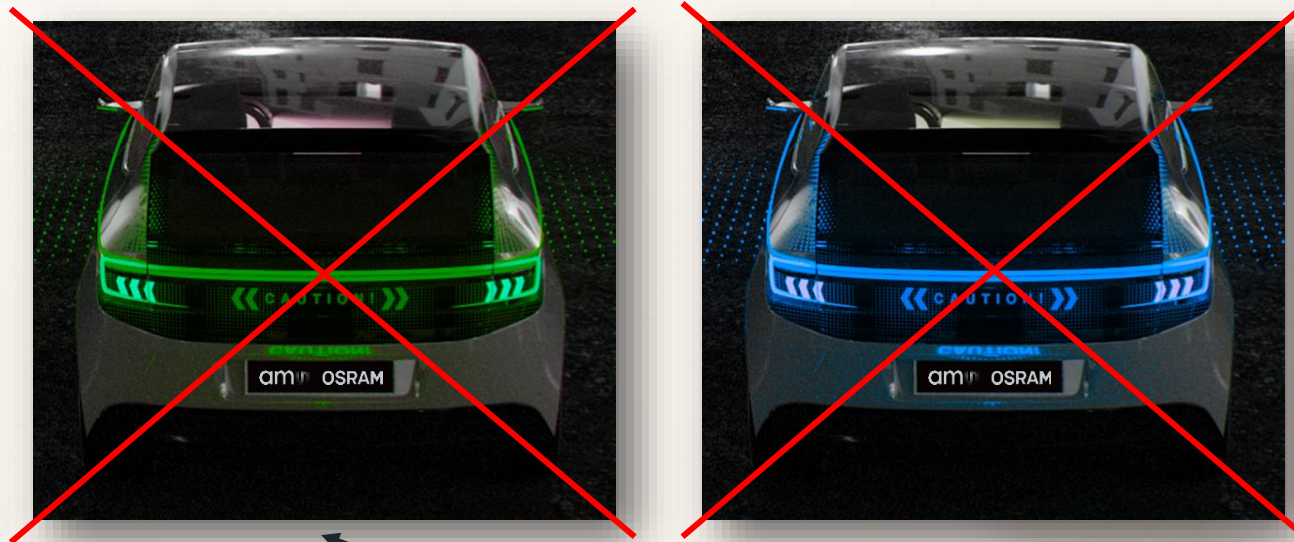
"OSP" - Open System Protocol is royalty free and open for partners and competitors.

OSRAM OSIRE™ E3731i:

- intelligent LED with Integrated Driver
- up to 1000 individually controllable LEDs (Daisy Chain)
- simple Layout and Board to Board Connection
- EMI Compliance



Novel Intelligent LEDs for Highly Scalable Dynamic Exterior Lighting



**OSRAM OSIRE™ E3731i
(interior RGB LED)**

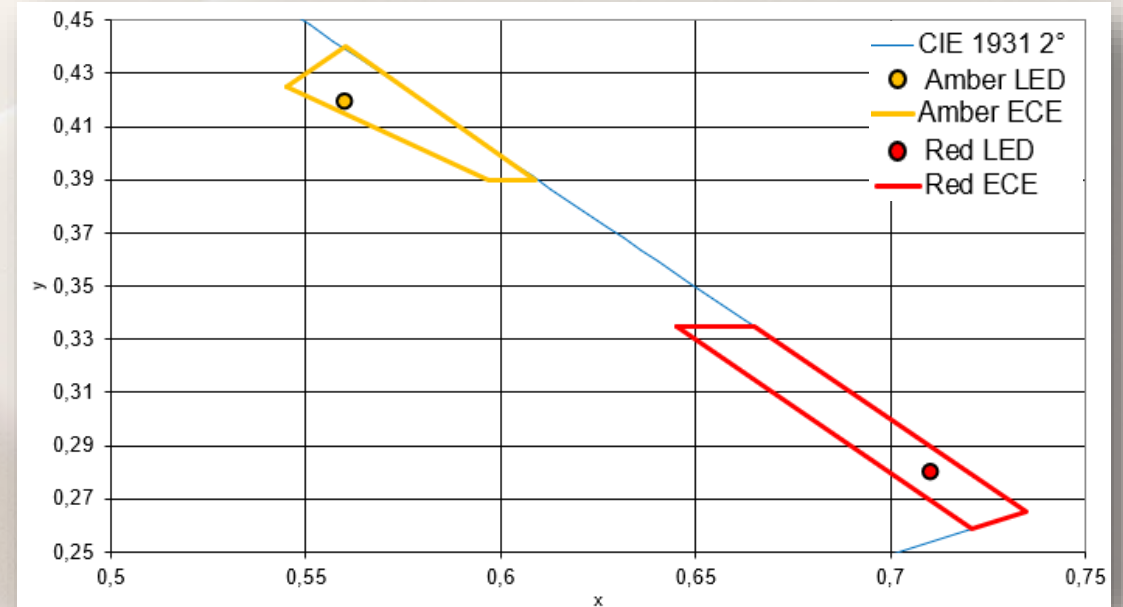


**Prototype
Yellow LED**



**Prototype
Red LED**

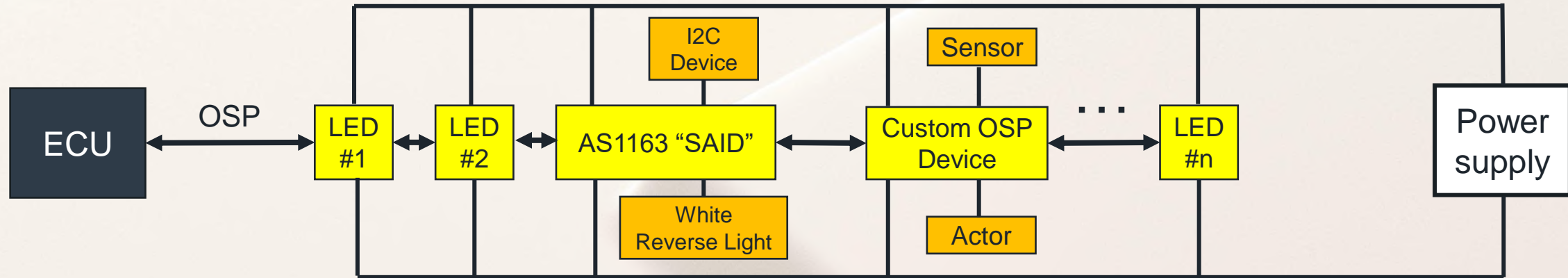
Demonstrator: Dynamic RCL featuring intelligent LEDs with OSP



- 156x Red and 60x Yellow Prototype LEDs with OSP
- Color / Brightness within ECE Specification

Features/Possibilities

- OSP not only for LEDs: I2C, Sensors, Actors, ...



- Built in Error Detection
- Architectures (e.g. Star Architecture)
- Any number of LEDs (compared to n-Channel Driver)
- Other Colors

Summary and Outlook

- Exterior lighting spanning large areas (e.g. horizontal taillights)
- Dynamic lighting effects
- Enables customization and personalization options
- Simplified wiring and no need for a dedicated driver

- Whats next: Front Grille Demonstrator
- Be creative: Let's have a talk at our booth.