ECS 2024 GHENT BELGIUM 5-6 December

Embedded Intelligence

AI-TWILIGHT

AI-digital TWIns for LIGHTing
AI-powered digital twin for lighting infrastructure in the context of front-end Industry 4.0

Challenges and objectives

AI-TWILIGHT's goal is to substantially strengthen the market position of the European lighting industry by taking it to the leading edge of digitization.

- *To create self-learning multi-domain models of LEDs and electronics modules for lifetime prediction, using field measurement data and in-situ testing and use those self learning digital twins (SLDTs) for the design and operation of luminaires.*
- *To support the front-end design process and back-end services with self-learning digital twins with lifetime prediction capabilities.*

Meeting this objective will result in overall design and development cost reduction and shorter time to market while fostering innovation and quality of the lighting products and services as well.

AI-TWILIGHT

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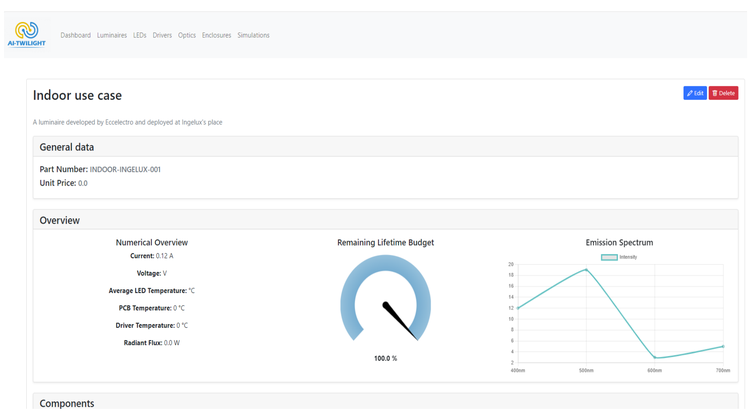
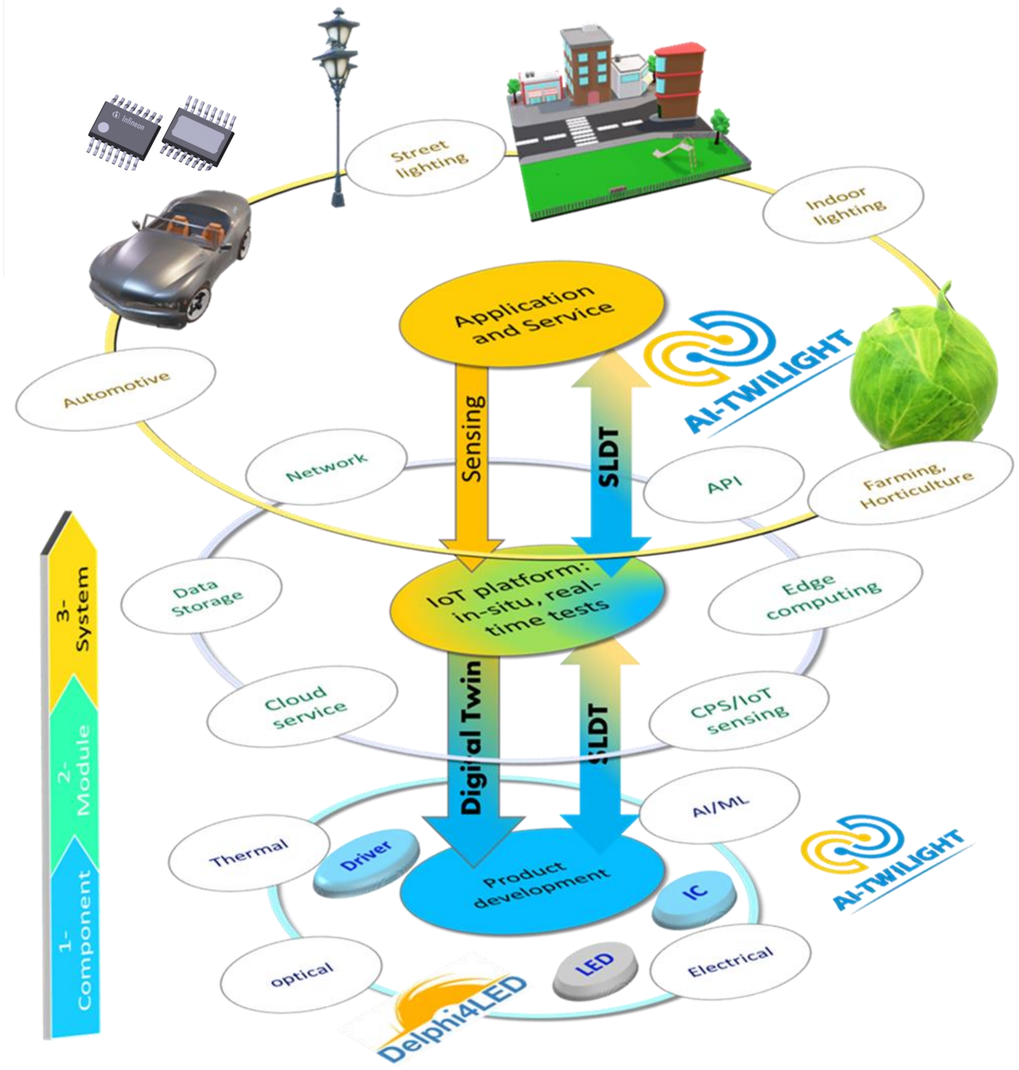
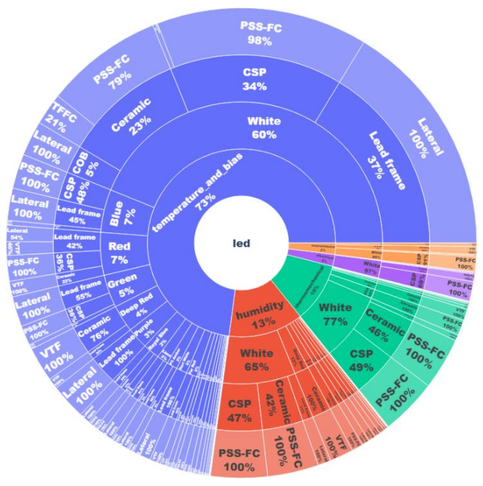
Digital Twin Factory

Orchestrator tool: The digital twin factory, AI-powered digital twin platform is available for trial run; this is the first digital twin in the lighting industry. The application of digital twins in selected use cases is being evaluated.

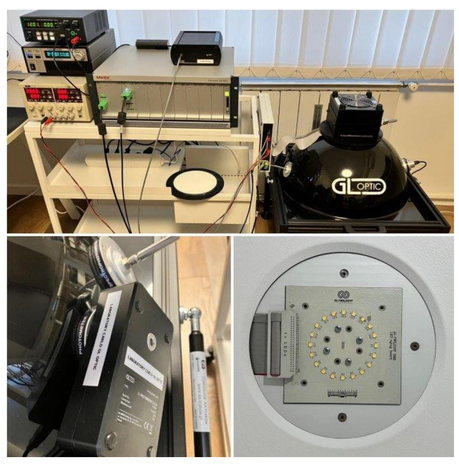




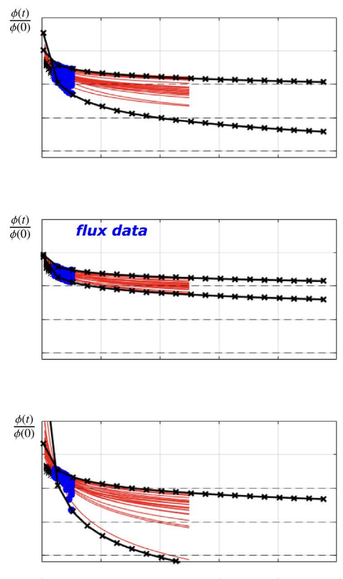
Exploitation Plan



Data Base Overview

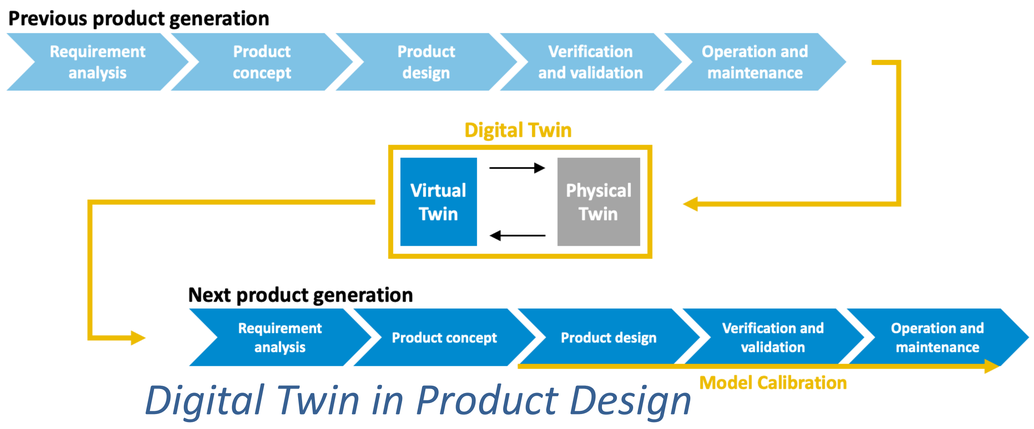


High Speed Test System



Modelling for DTs

Impact: Significantly speeding up the product development cycle



Digital Twin in Product Design

Dissemination

- *Total of ~125+ disseminations, 73+ presentations in related conferences*
- *Key roles in TC2-84 of CIE and TC-274 of ISO in international standardization bodies. several standards (JEDEC, CIE, ISO) published or revised*

Chips JU