

PHILIPS

sense **and** simplicity

*SASG meeting
Lighting Eindhoven*

HW emulation:
.....Is a waste of time and effort !

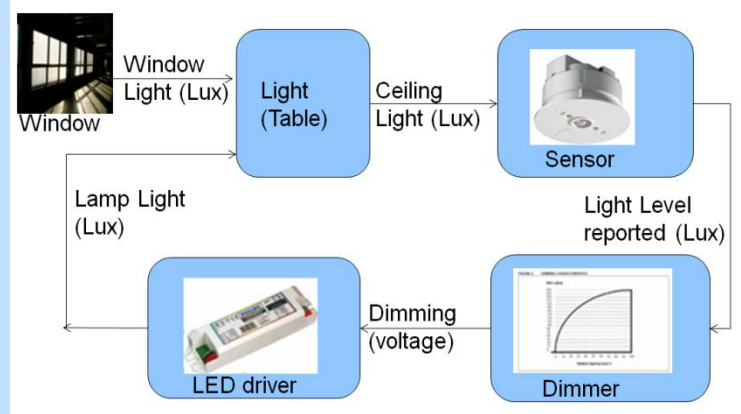
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Simulation versus Emulation

Simulation is the imitation of a complete system, including its environment:
 Flight simulator



Room Lighting Control

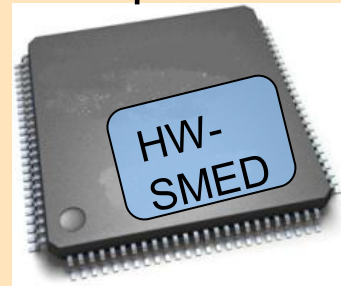


Emulation is the imitation of an object by some other object:

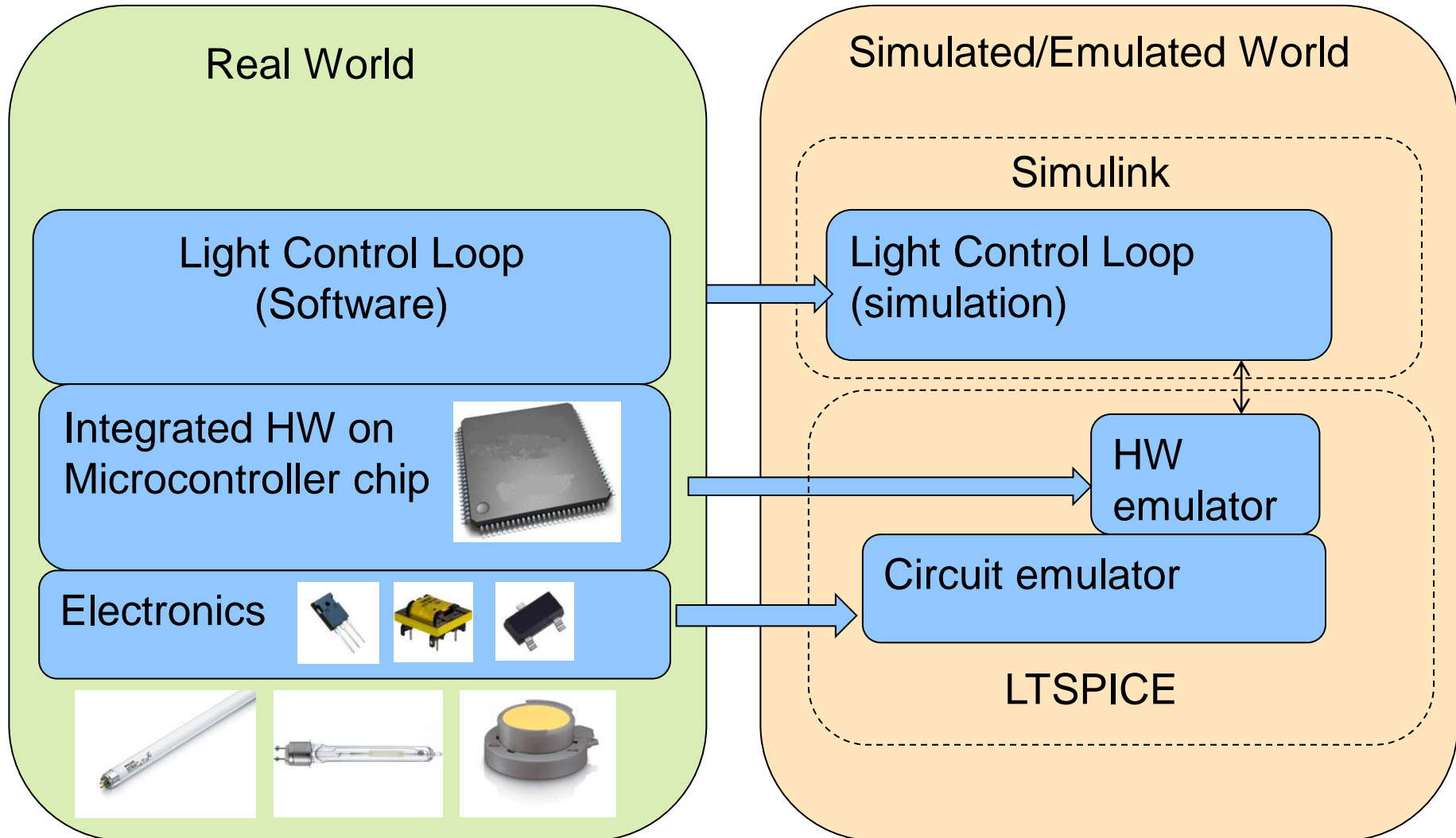
PlayStation emulator on PC,
 emulating a Playstation game CD



SMED emulator to emulate
 HW component for testing



Lighting case: Real world versus Simulated & Emulated world



Here are some statements to start of discussions

- Today I present some statements claiming:

HW emulation is a waste of time and effort !

- Please consider why you agree / disagree with these statements → discussion . . .

Disclaimer: These slides are designed to trigger discussion and do not necessarily express the opinion of the author or Philips

HW emulation is a waste of time and effort!

- Historical perspective:
 - In the past we directly build electronics
 - More integration of electronics into microcontroller.
 - Circuit simulator as design tool for reliability, not for software testing.
- Most difficult issues are found on actual HW during integration:
 - EMC/Interference/PCB layout problems
 - Not ideal components
 - Real time aspects not included in emulation
- During emulation:
 - a simplified model is used.
 - a detailed emulation needs time and effort
- The effort to build the full simulator/emulator:
 - Can delay a project seriously.
 - Why work on an expensive emulator if you build real thing?
 - Why not first time right?
 - And within the time constraints for software development.

