Tuesday, 17 May 2022, 16:00 CEST

EPIC Members New Product Release

LUCEDA PHOTONICS

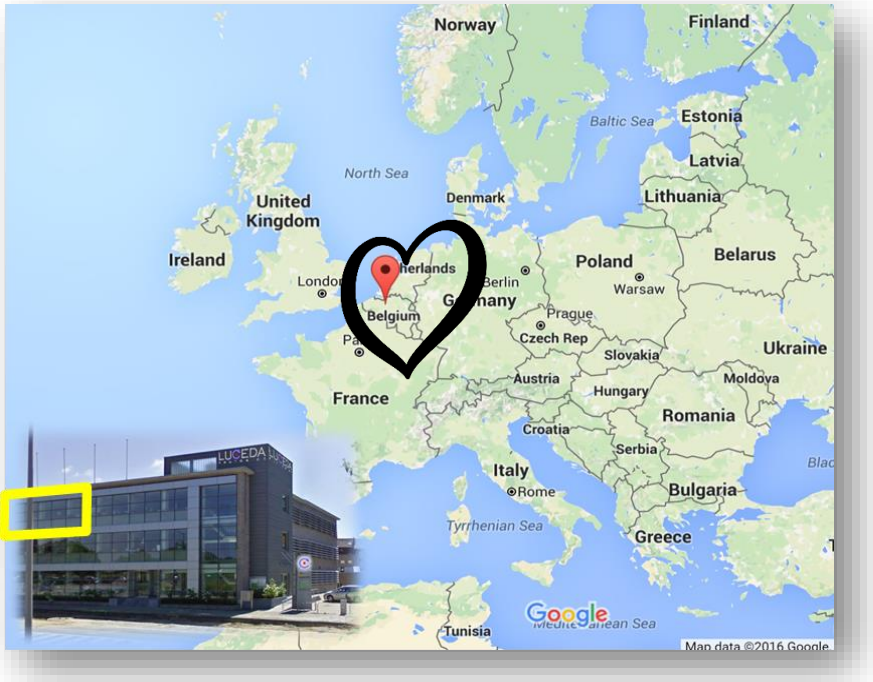
IPKISS IP Manager: Improve your design quality with automated IP testing

Martin Fiers
Product Manager

Supported by

EPIC
European Photonics Industry Consortium

Luceda Photonics



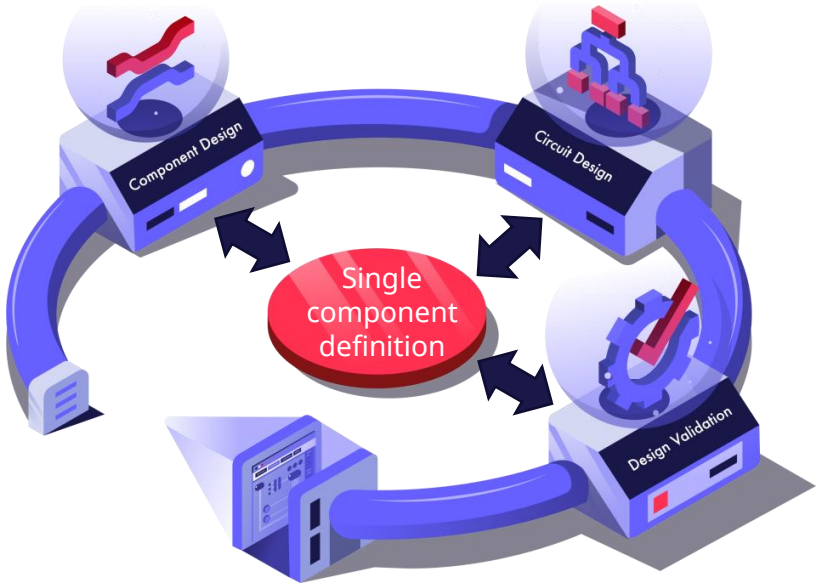
- Founded in 2014
- HQ in Belgium
- Office in Shanghai

"Help photonic IC designers enjoy the same **first-time** right experience as electronic IC designers"

Luceda Photonics

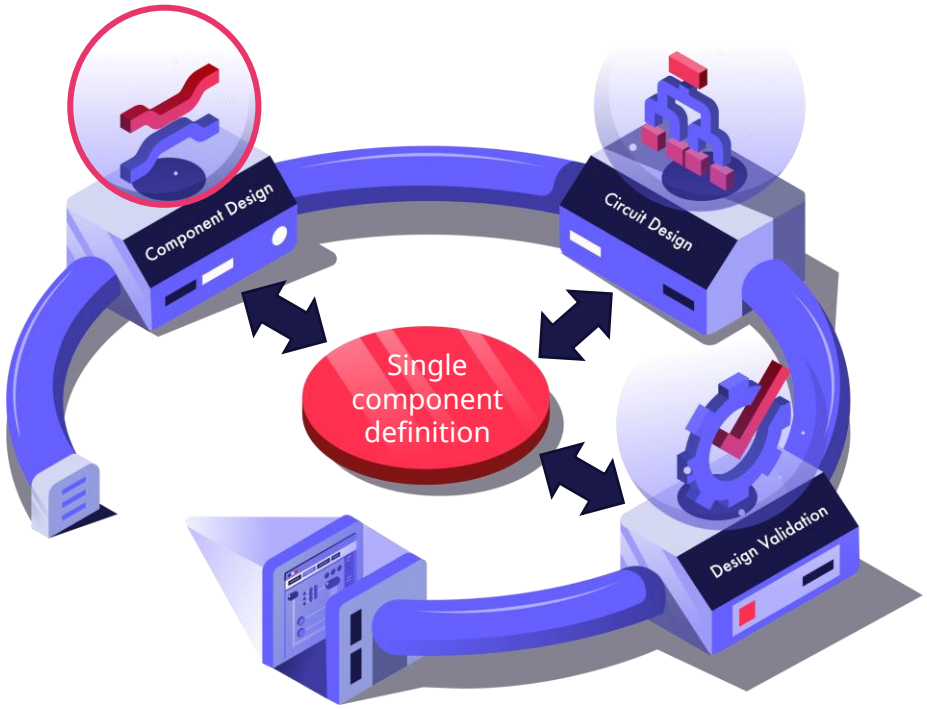
"Help photonic IC designers enjoy the same **first-time** right experience as electronic IC designers"

IPKISS Photonics Design Platform

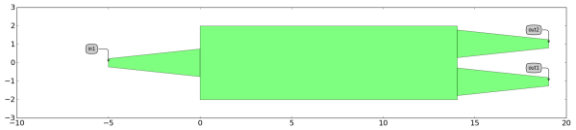


python powered

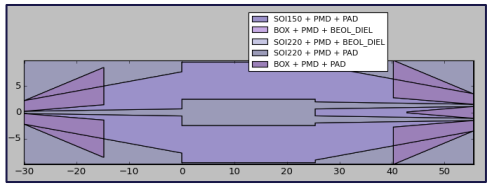
IPKISS Photonics Design Platform



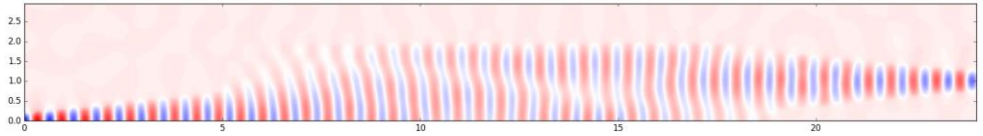
- Parametric components in layout & simulation



- Virtual fabrication



- Built-in physical simulations using CAMFR or with 3rd-party tool (Ansys Lumerical, CST Studio Suite)



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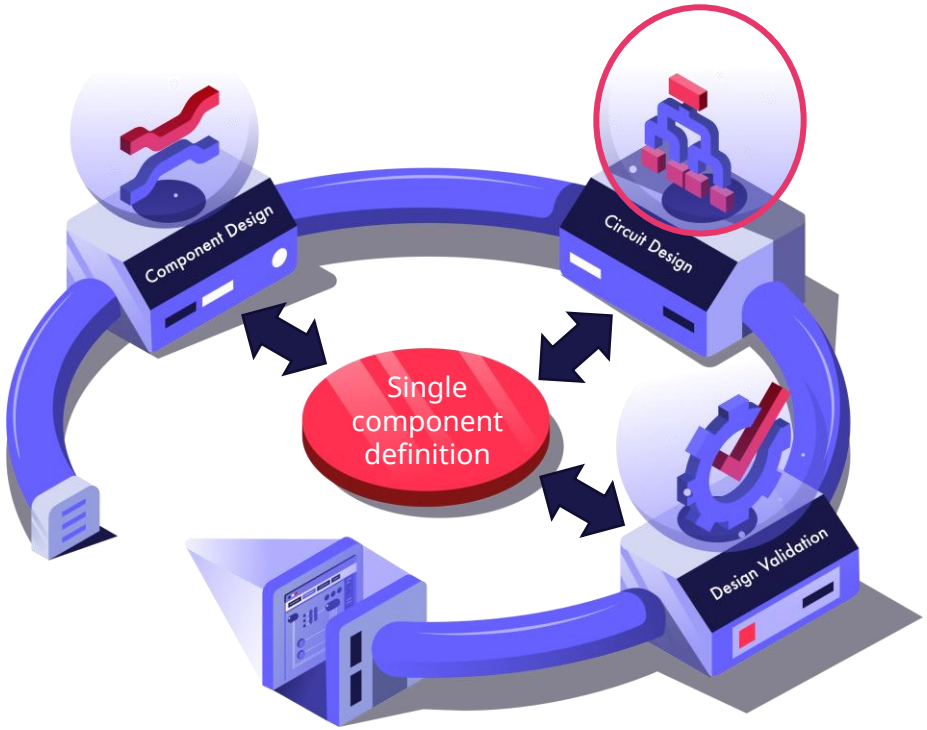
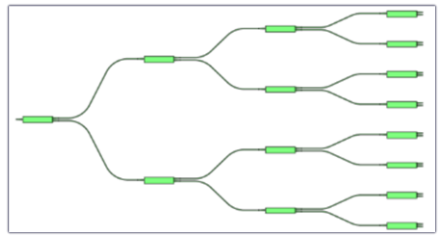
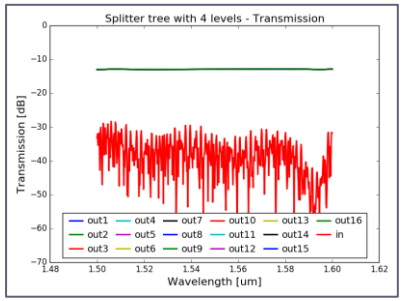
IPKISS Photonics Design Platform

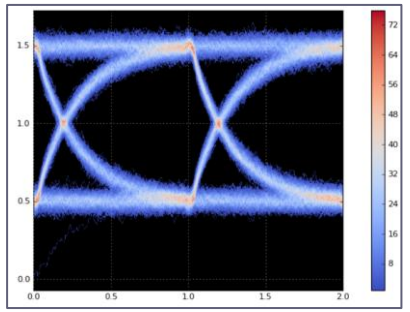


- Parametric circuits in layout & simulation
- Circuit simulations with CAPHE simulation engine
- Tight link layout – simulation



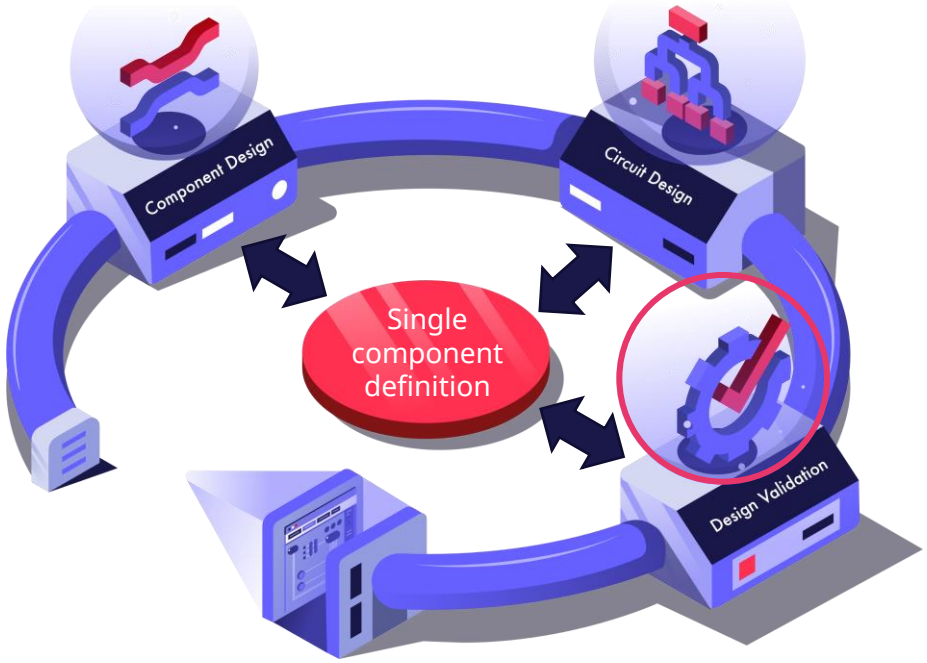


Frequency domain

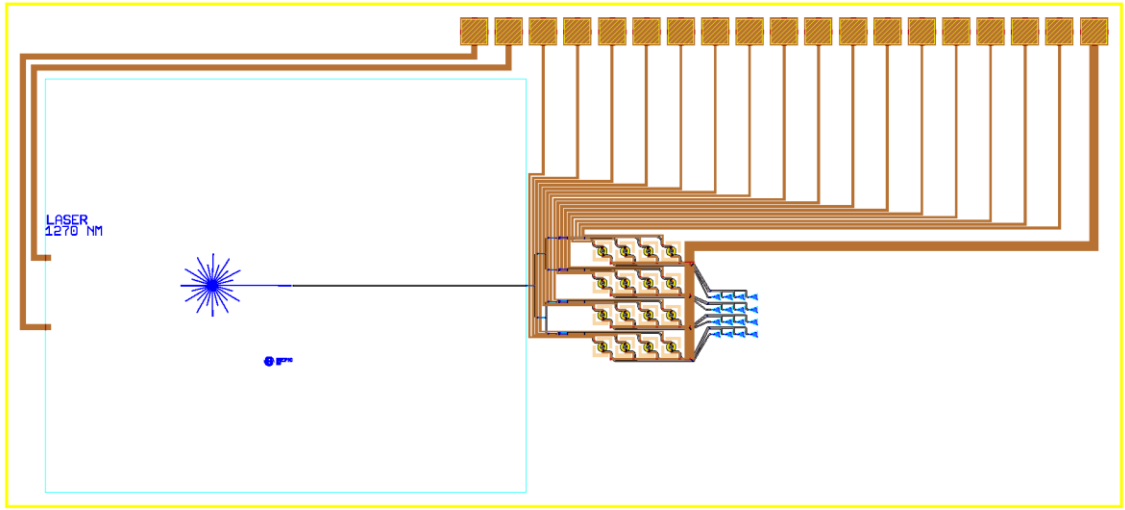

Time domain

python powered

IPKISS Photonics Design Platform

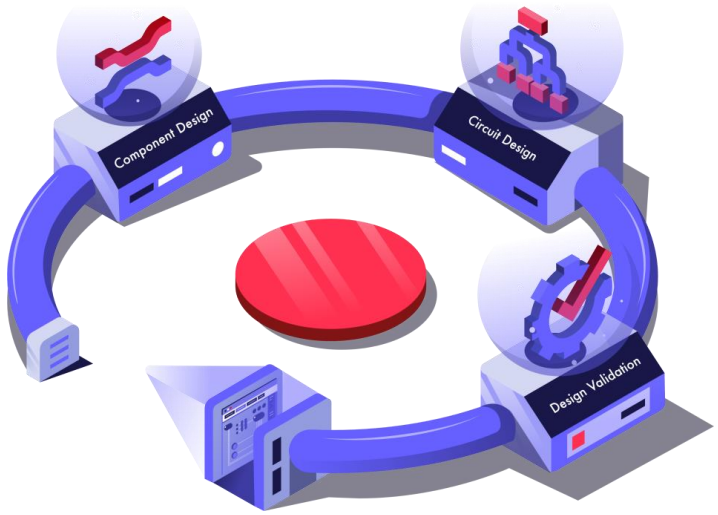


- Design for manufacturing
- Netlist extraction
- Post-layout verification with CAPHE



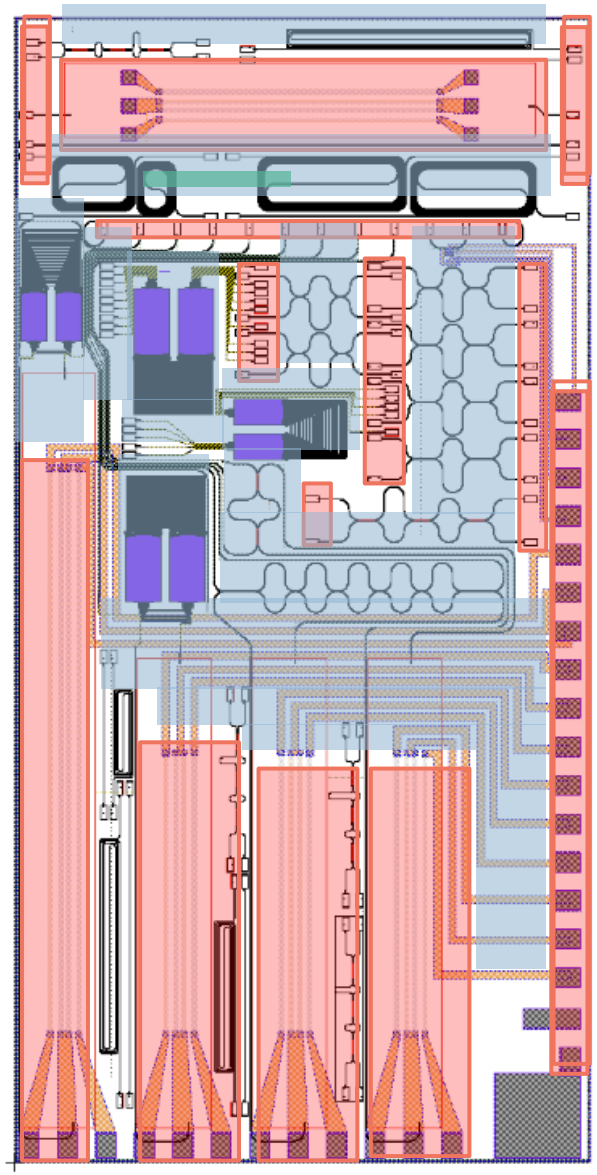
python powered

IPKISS *PDKs*



- Powered by IPKISS: layout + circuit models
- Export to OpenAccess, iPDK, uPDK standards
- Vast offer of PDKs from around the world

python powered



PIC Design

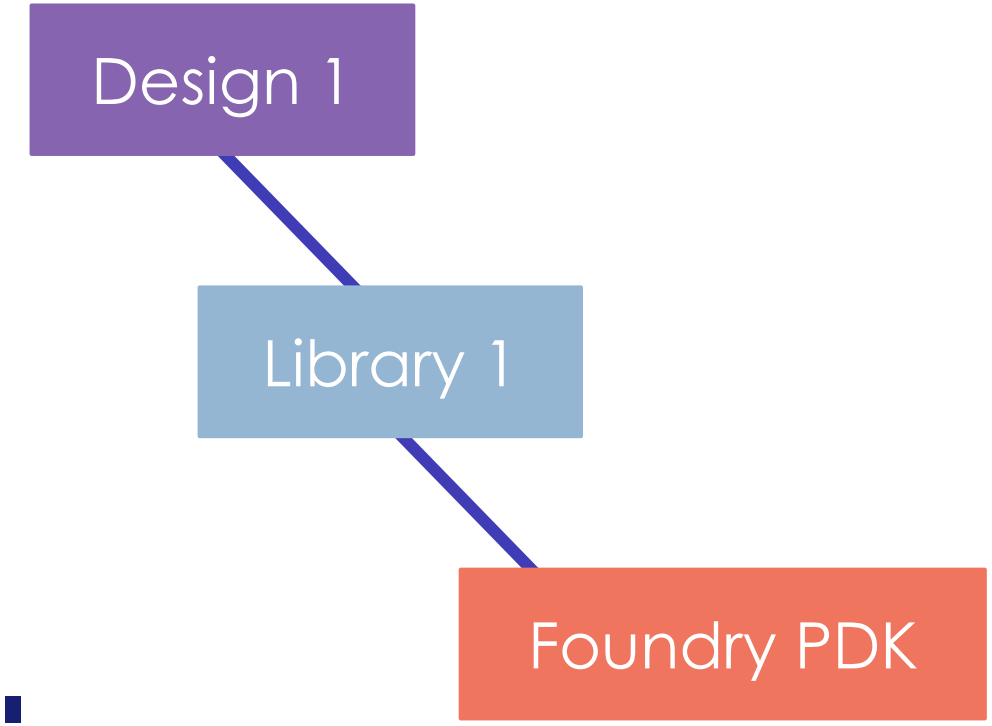
Design 1

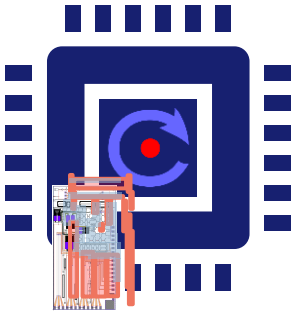
Library 1

Foundry PDK

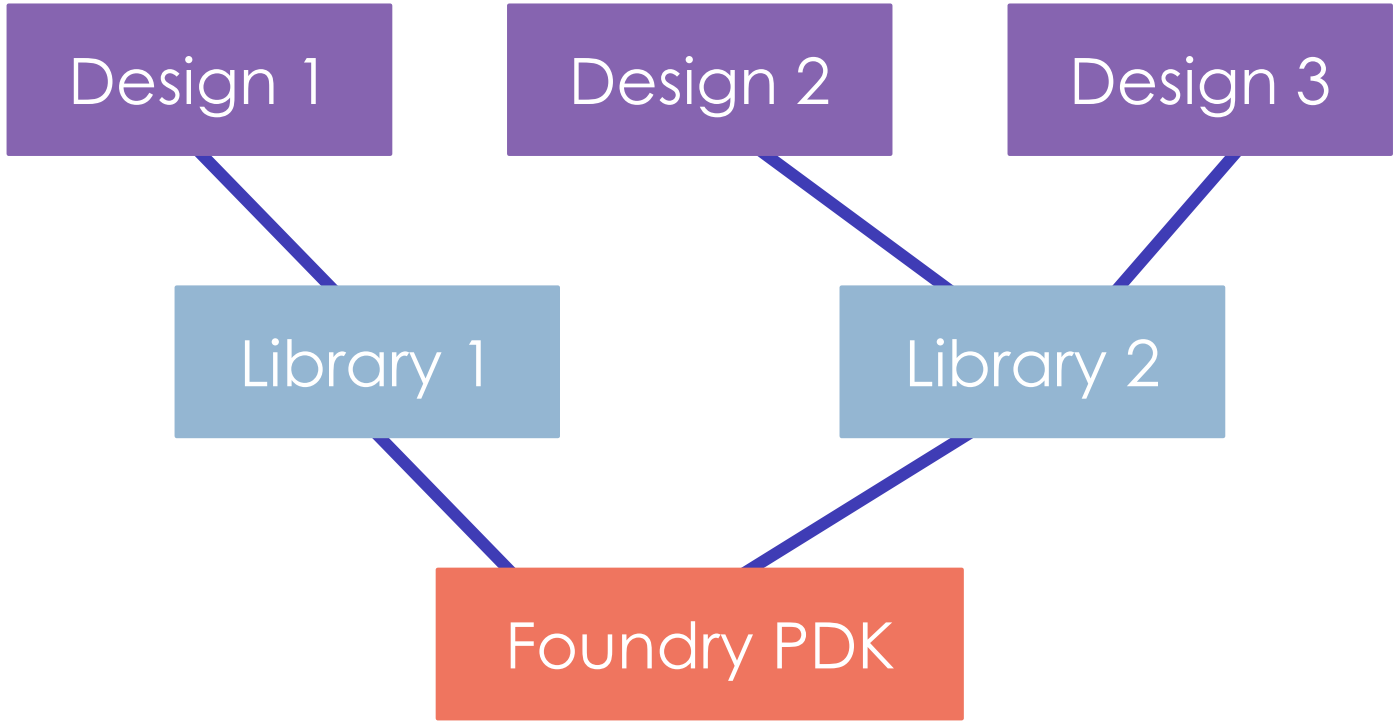
LUCEDA PHOTONICS

PIC design based on reusable building blocks

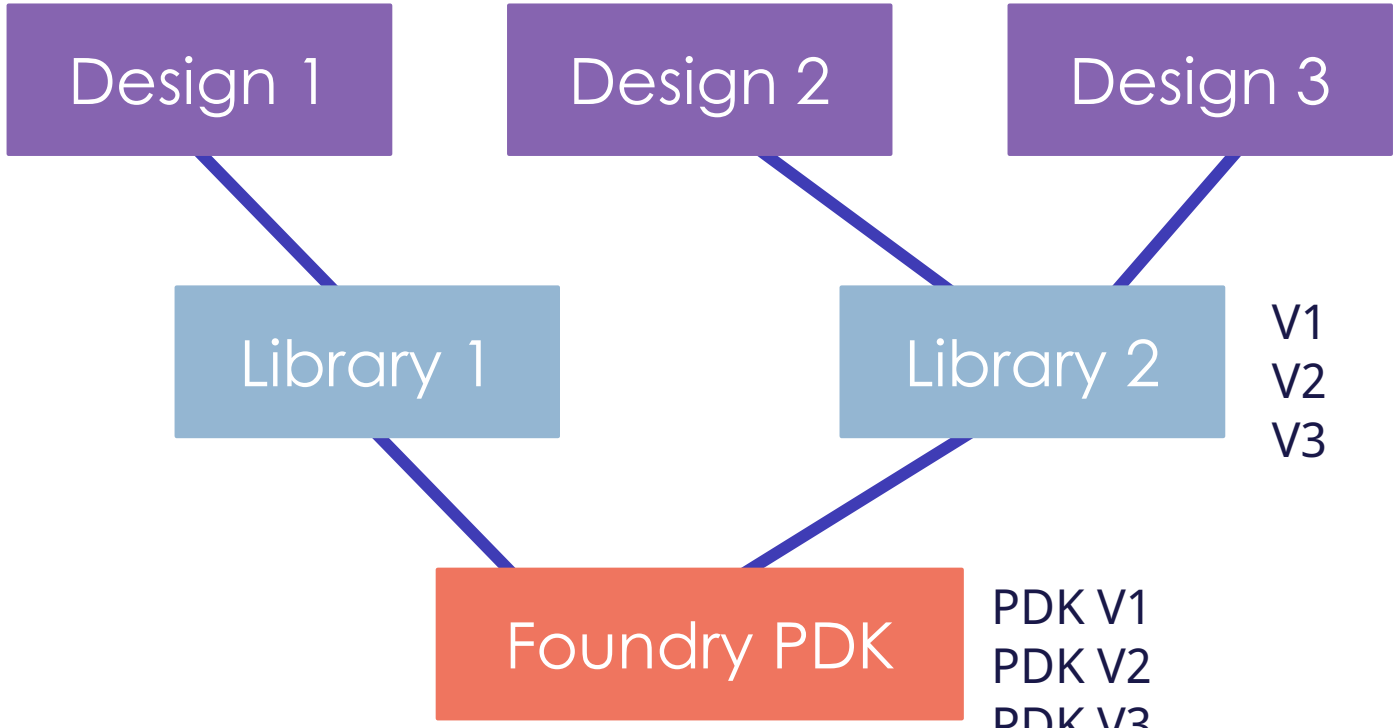




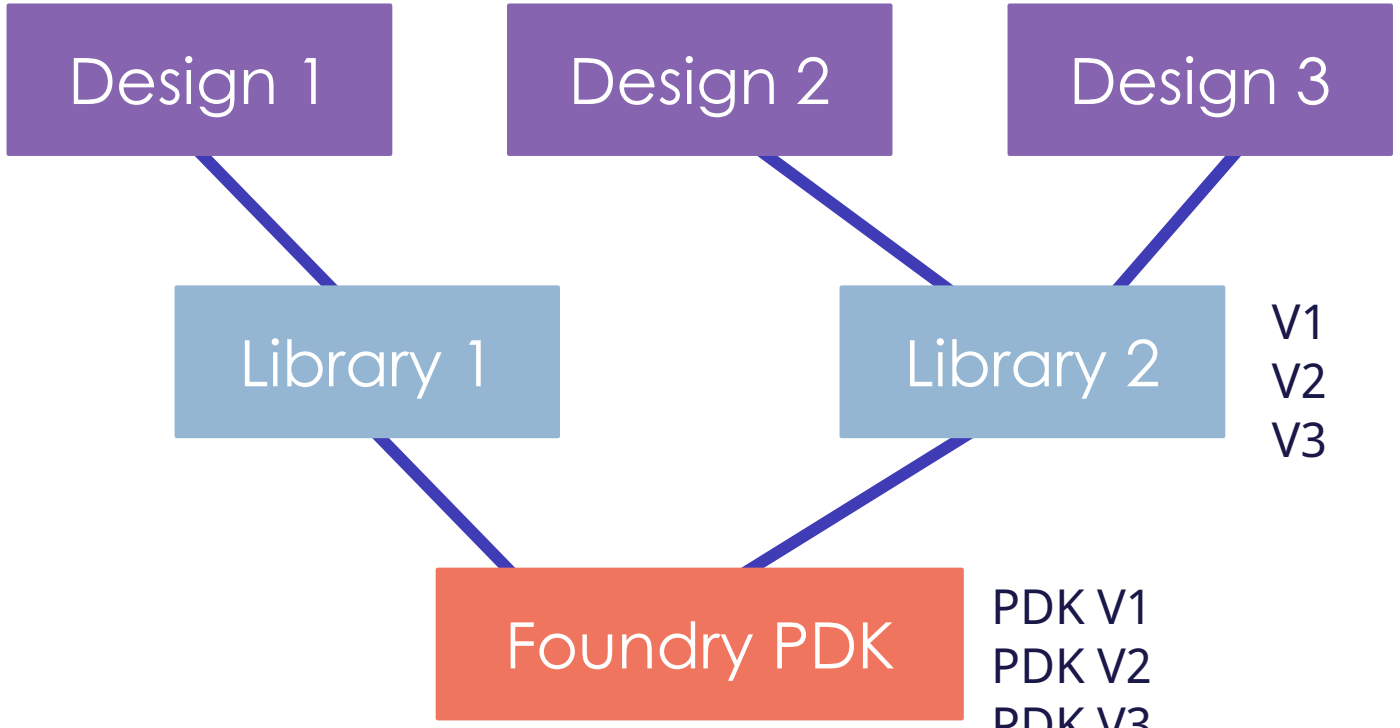
When your design team grows



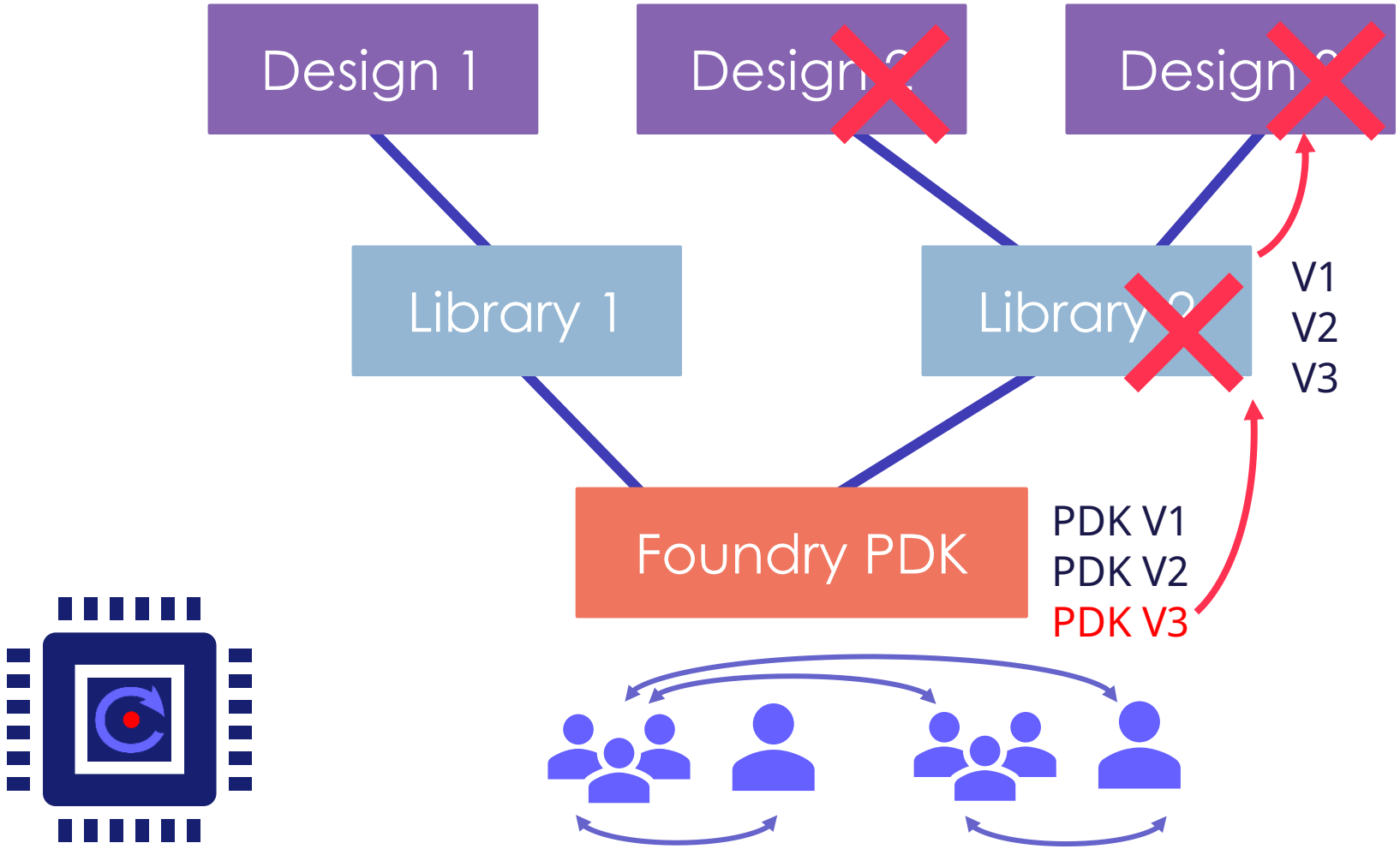
PDKs and libraries keep evolving



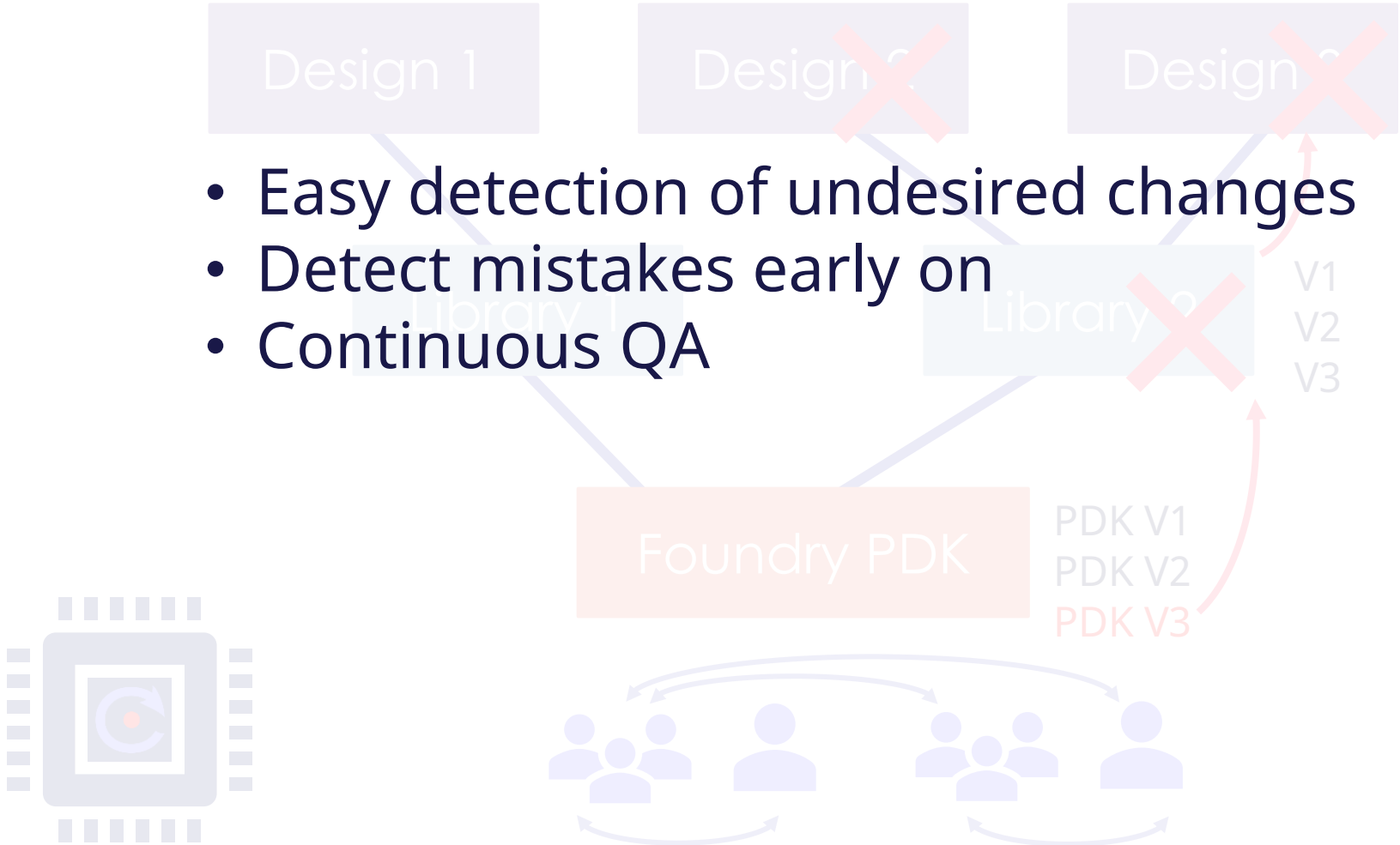
A lot of internal communication / collaboration



Risk of errors propagating



Need for



- Easy detection of undesired changes
- Detect mistakes early on
- Continuous QA

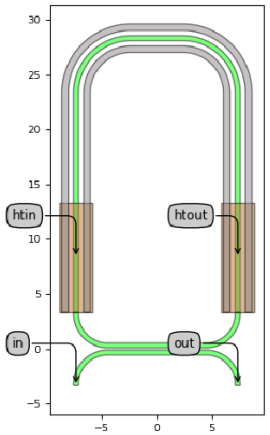
IPKISS *IP Manager*

- Define QA tests

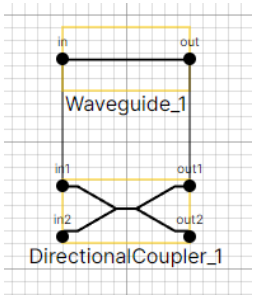
Design IP Library *or* PDK

Tests

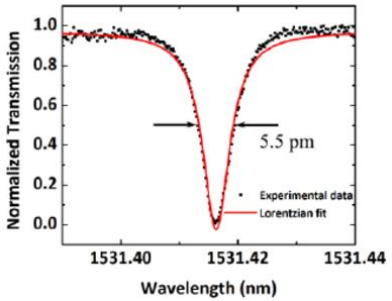
layout



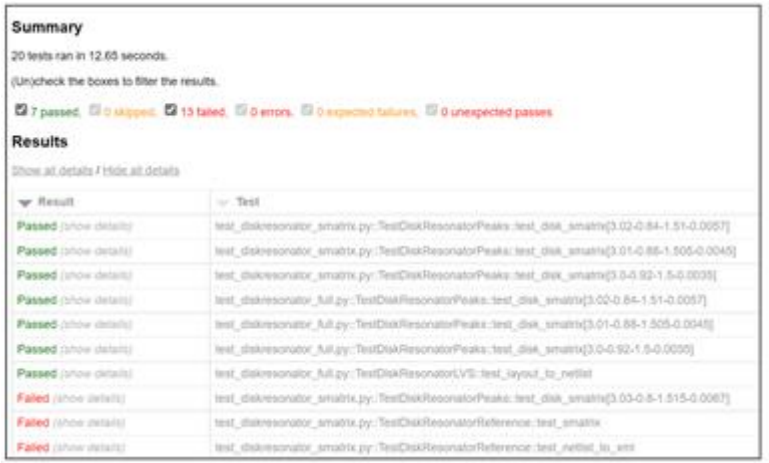
netlist



simulation

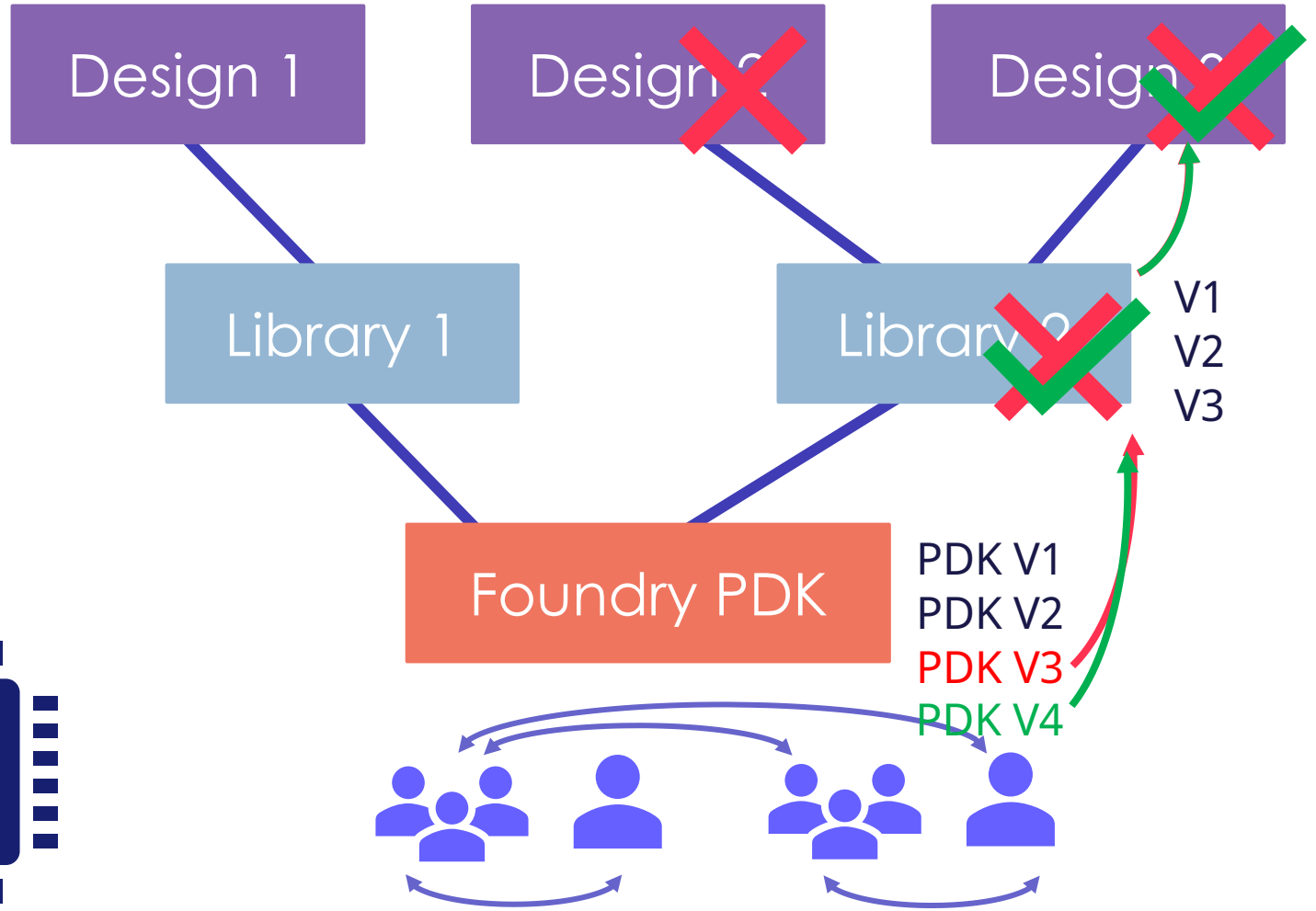


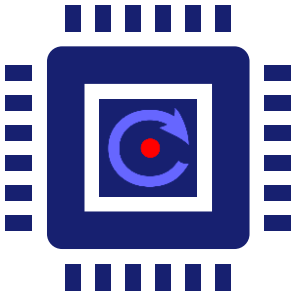
HTML report

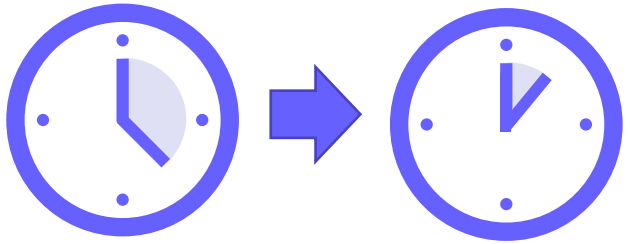


Accept or reject changes

Detect errors early



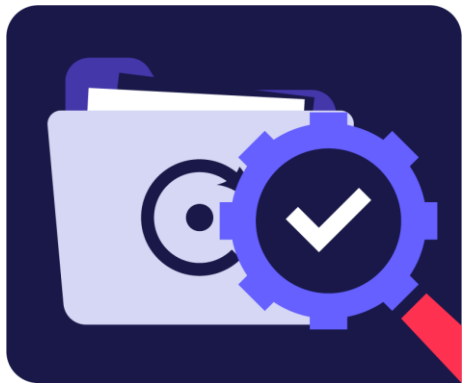




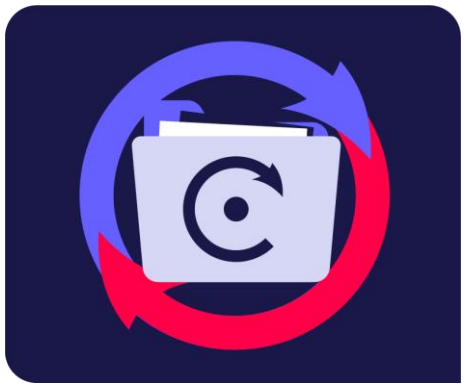
IPKISS *IP Manager*

- Define custom **quality tests** for continuous validation in layout, netlist and simulation.
- Reduce your design iteration time and your **time to market**.

Collaborative IP design libraries in IPKISS



IP testing & validation



Adjust & iterate

LUCEDA PHOTONICS

Take control over your photonics design IP lifecycle

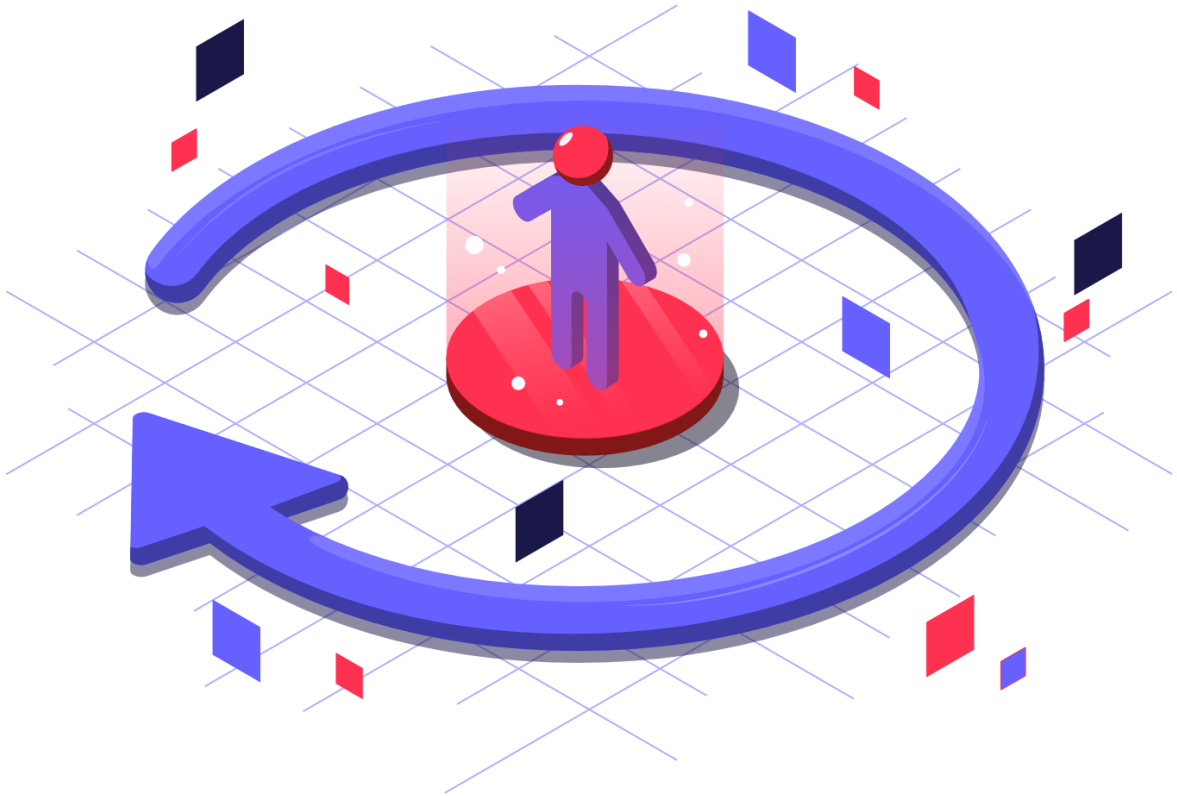
www.lucedaphotonics.com

Backup slides

Training & Support

Dedicated customer care to maximize your design potential

- Kickstart training
- Application support
- Luceda Academy
- Training material and documentation
- Customer support portal
- Vast offer of training events



Services

Leverage Luceda's expertise

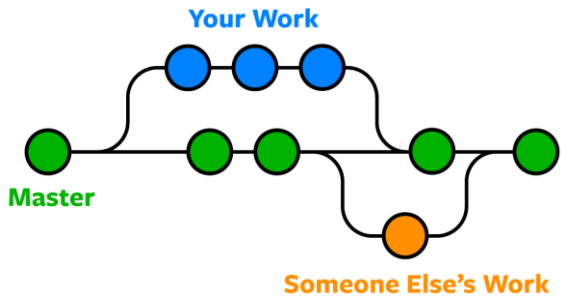
- Create and validate
  - compact model libraries
  - PDKs
  - reusable design toolboxes
- Design flow optimization
- Specialized training
- PIC design best practices

IPKISS PHOTONICS DESIGN PLATFORM

* *New*

Library development: workflow

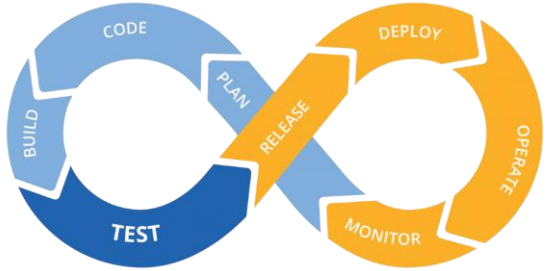
Use version control (e.g., git)



Create testbench

Test	Check
Code quality	✓
DRC clean	✓
Specs	✗
Size constraints	✓

CI/CD



Continuous integration, continuous delivery

Inspecting changes

XML

- Full hierarchical representation of your layout
- Check all properties

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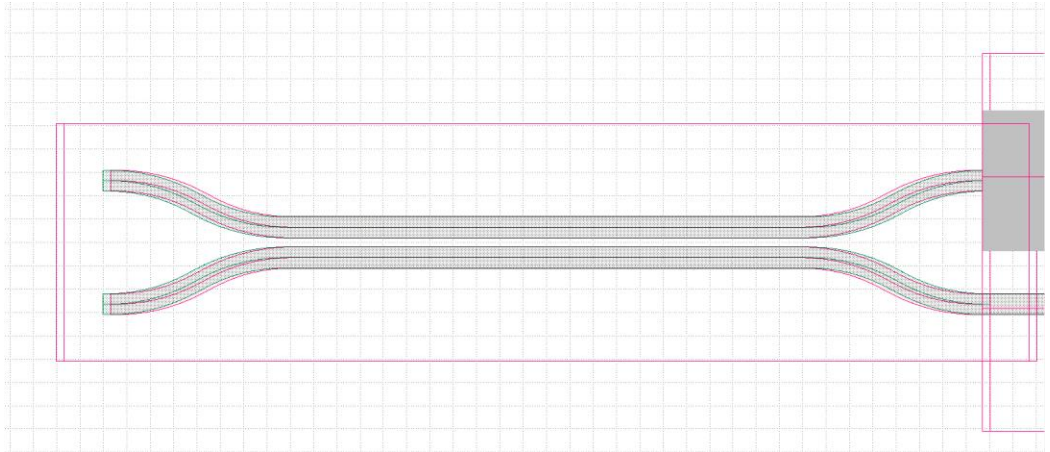
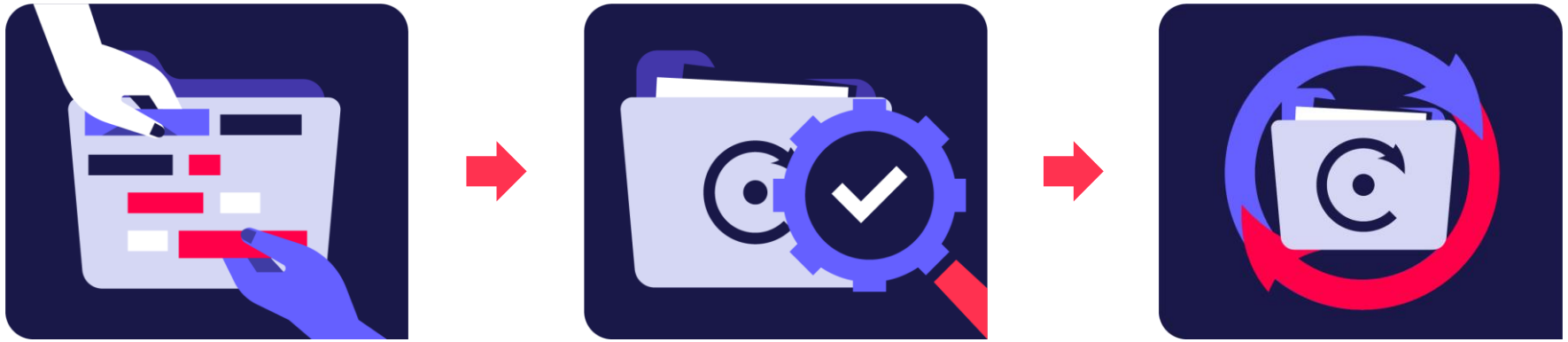
GDSII

- Visually compare desired or undesired changes in GDS format



IPKISS *IP Manager*

- Define custom **quality tests** for continuous validation in layout, netlist and simulation.
- Reduce your design iteration time and your **time to market**.
- Enhance your team collaboration with shared common libraries and **version control**.
- Enhance **knowledge sharing** and retention.



Collaborative IP design libraries in IPKISS

IP testing & validation

Adjust & iterate