



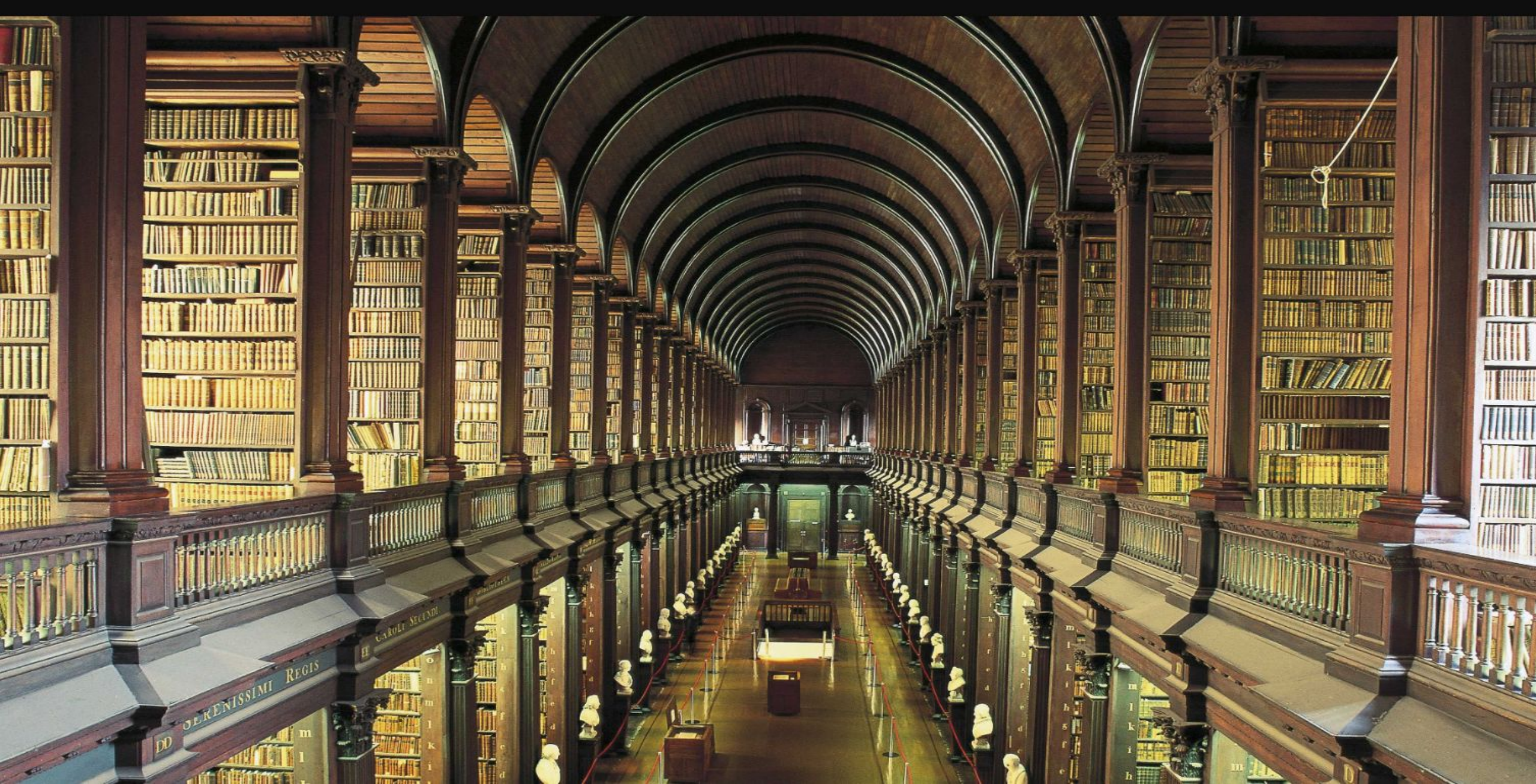
Requirements management flow on digital projects with REQTRACER

Alessandro Iannuzzi - STMicroelectronics

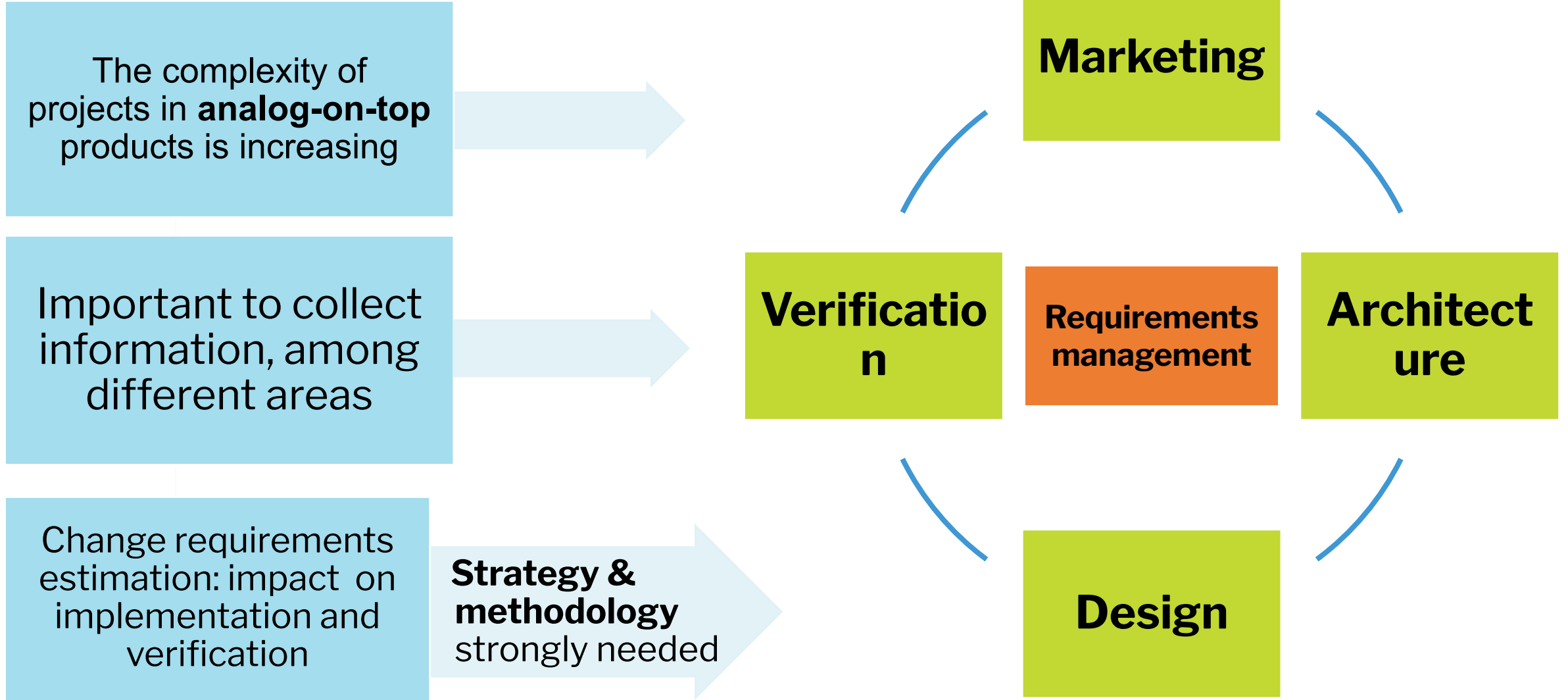


Milan - Italy





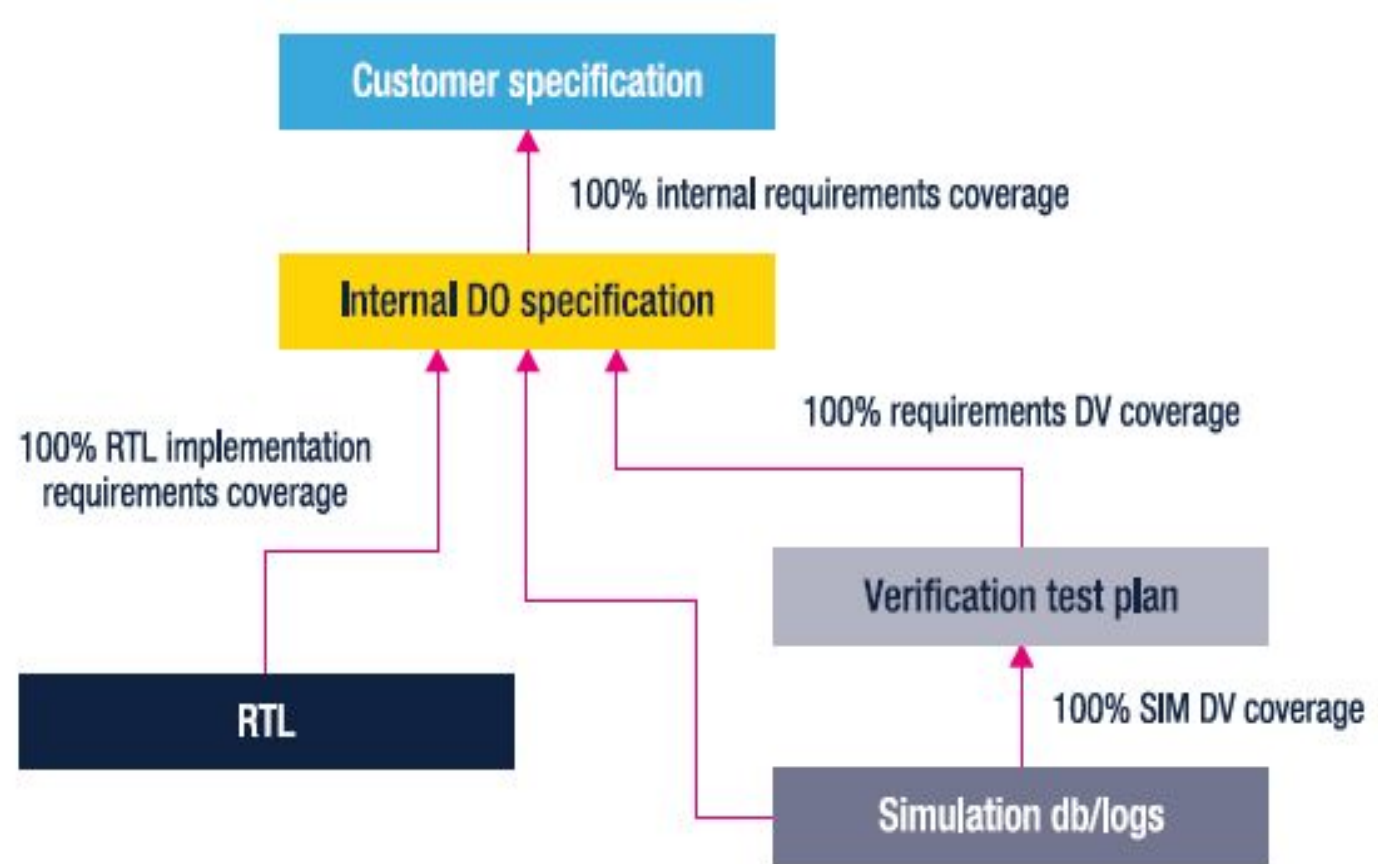
Motivation



Main idea

A new methodology based on **ReqTracer** (by Siemens), linked to:

- **QuestaSim** simulator (by Siemens)
- **Xcelium** simulator or **Vmanager** (by Cadence)



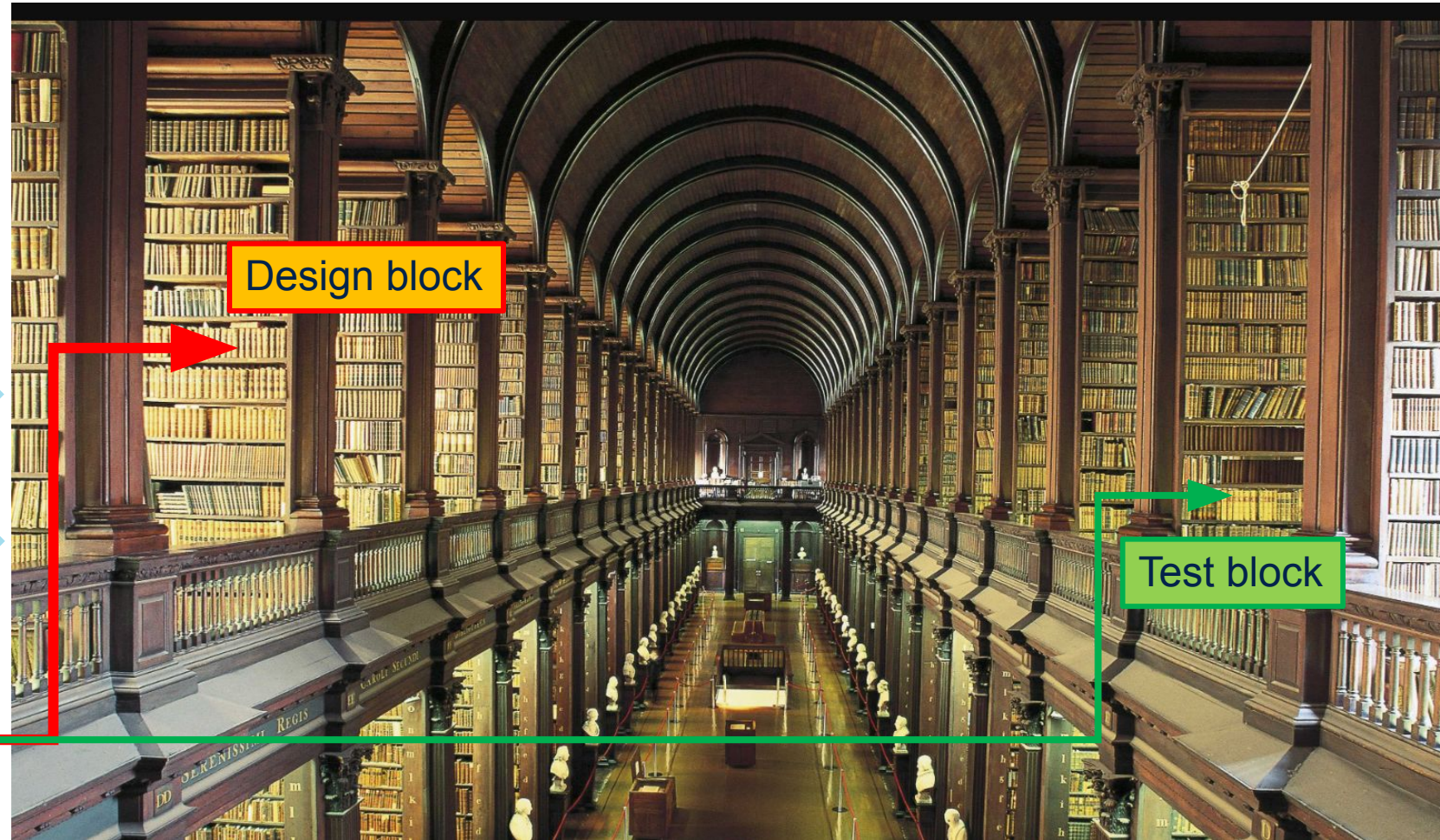
Digital Design as a library

Catalogue of functionalities
with ID# (requirements)

Create an ID# list (index)

Make connections ID
design blocks – design tests

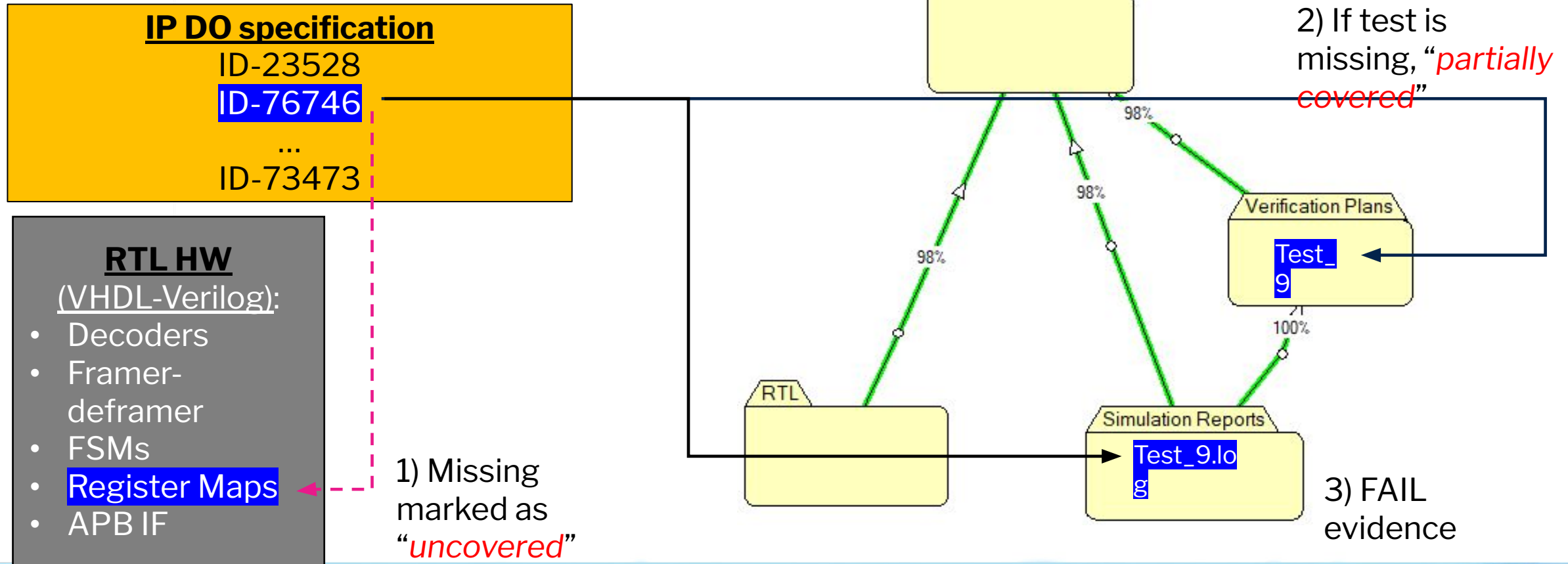
Easy to find design/tests blocks as
for things/books in a library



Tools and key evidence: requirement missing

In **Reqtracer** project DOS doc requirements linked to:

- 1) Its RTL file: if not implemented, ☐ “uncovered”
- 2) In the Test plan, if not called ☐ “partially covered”
- 3) In test log file, if not called ☐ FAILURE



Tools and key evidence: Hall sensor Design example

As example a **Hall Sensor** digital design
Impact Analysis in **Reqtracer** easily done:

- a) Impact analysis on ***change requirements***, affecting
RTL files and tests ➡ Change in RTL & tests
- b) Cross-check on ***partially covered requirements*** ➡ test missing
- c) Cross-check on ***uncovered requirements*** ➡ both RTL & test missing



Tools and key evidence: Hall sensor Design example

Time effort evaluation not using Reqtracer - comparison done vs another project:

For **change** requirements: impact analysis in another similar project

1 week, to decide the best architectural choice to face it

partially covered requirements

time gain of **6 weeks**

For **uncovered** requirements

- Applied RTL modifications
- new tests developed
- **time gain** of **8 weeks**



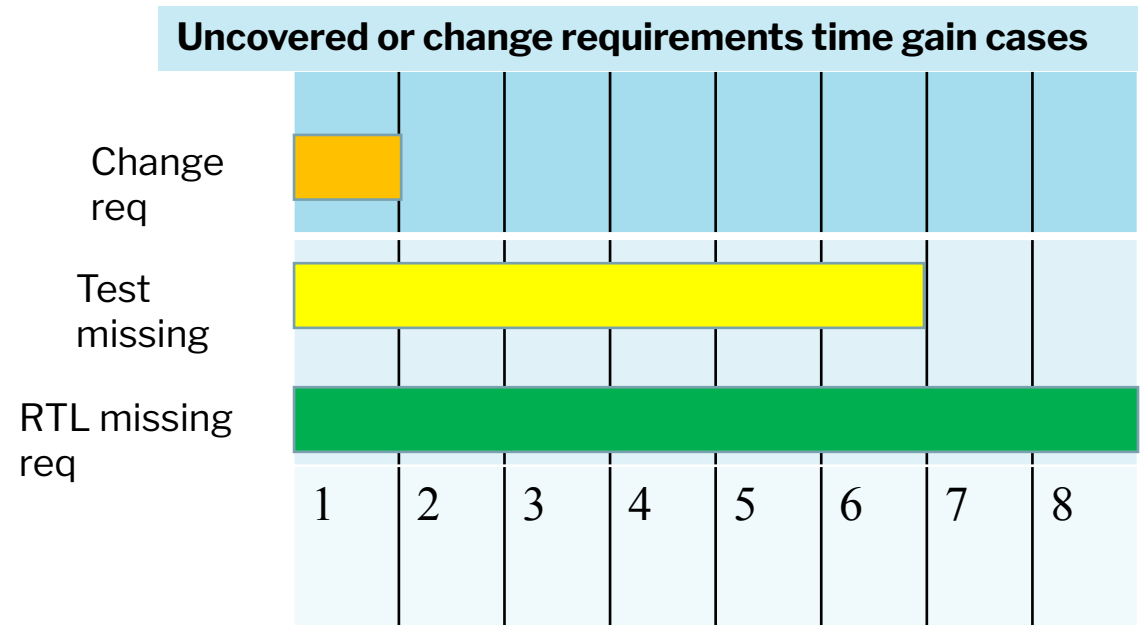
Summary

Our **design flow** extended to manage requirement through the whole project evolution

Advantages **(20%)** measurable in **time effort saved** and **re-spin avoided** appreciated within **weeks** and **months time saved**

The **achievements of full coverage** reached for:

- **100% Full RTL** requirements implementation
- **100% Full DV** functional coverage
- **100% Full DV** functional coverage execution evidence



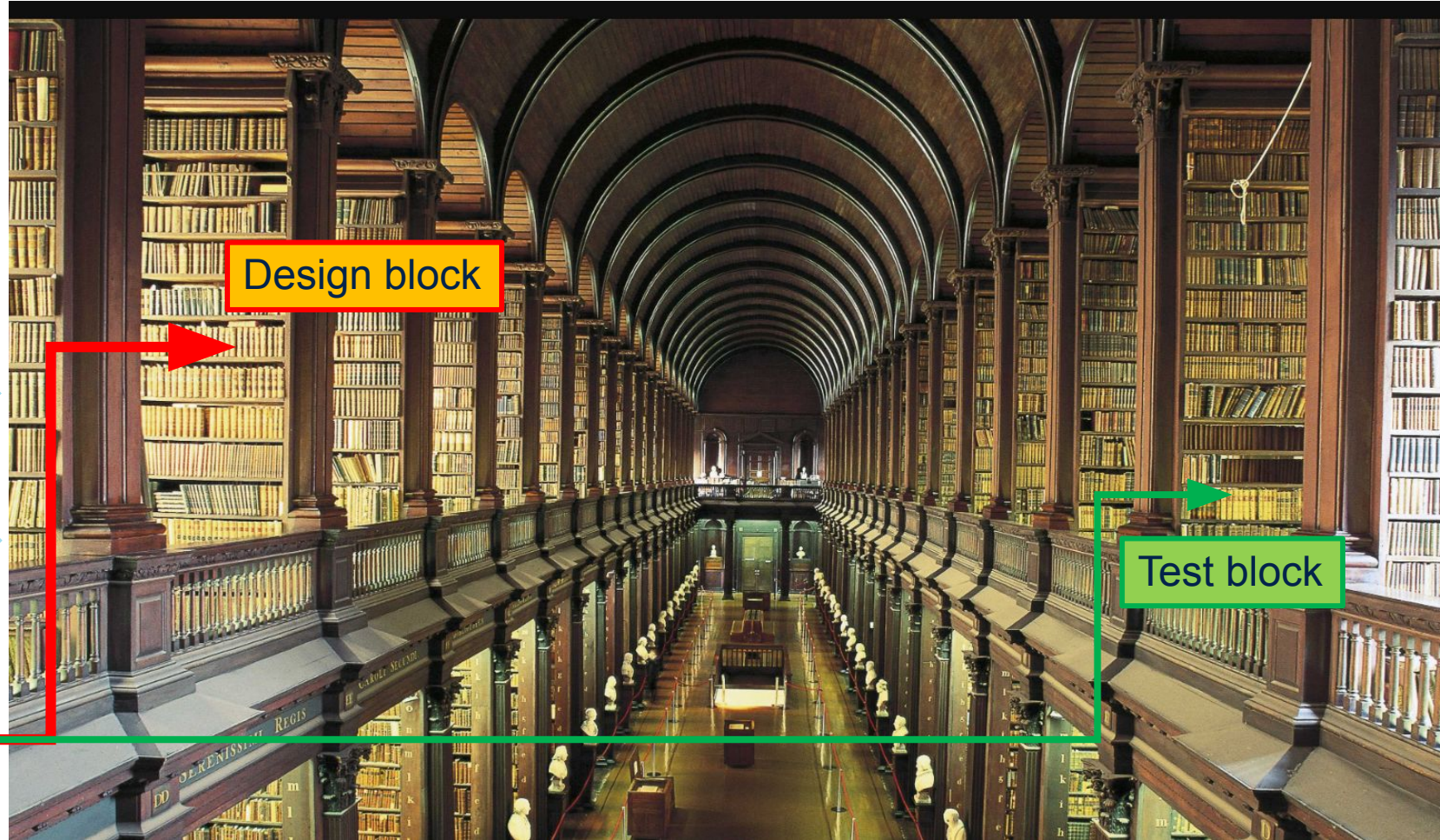
Project methodology as a library organization

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Thank You





Q & A

