Chapter 2 - OpenROAD workflow

Course authors (Git file)

Section 1

History of OpenROAD

Foundations and Realization of Open, Accessible Design (OpenROAD)

At the top of the documentation:

https://openroad-flow-scripts.readthedocs.io

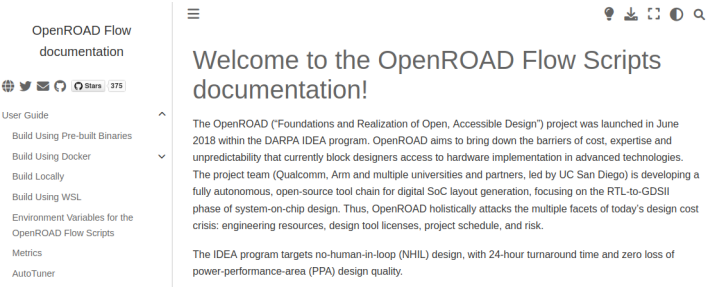


Figure 1: Darpa IDEA [1]

[1] Source: Screenshot of the webpage.

Darpa IDEA

https://www.darpa.mil/research/programs/intelligent-design-of-electronic-assets

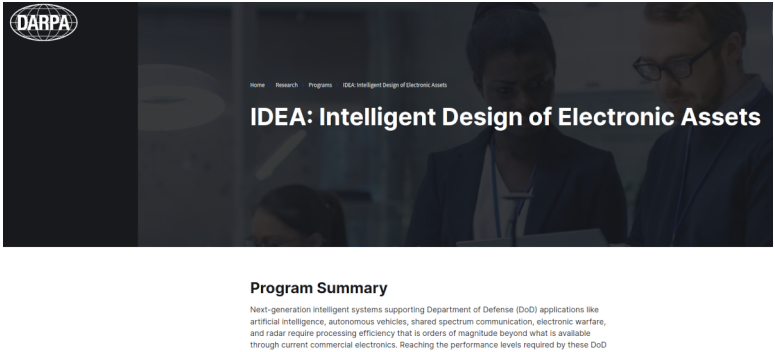


Figure 2: Darpa IDEA [2]

[2] Source: Screenshot of the webpage.

Darpa ERI

2018/2019 Darpa ERI, cadence and the people

https://community.cadence.com/tags/openroad

Start reading from the bottom!

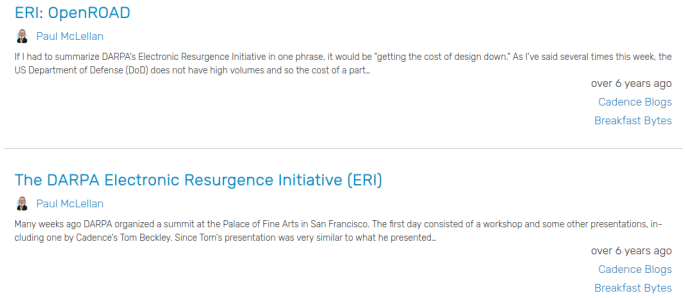
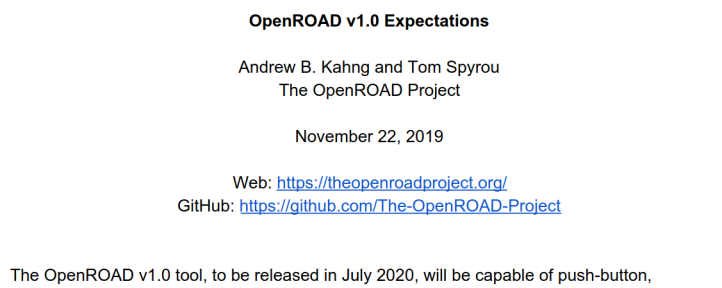


Figure 3: Darpa ERI [3]

OpenROAD V1.0

Document with OpenROAD V1.0 Expectations:

https://vlsicad.ucsd.edu/NEWS19/OpenROAD%20RTL-to-GDS%20v1.0%20Expectations.pdf



OpenROAD v1.0 Expectations

Andrew B. Kahng and Tom Spyrou
The OpenROAD Project

November 22, 2019

Web: https://theopenroadproject.org/
GitHub: https://github.com/The-OpenROAD-Project

The OpenROAD v1.0 tool, to be released in July 2020, will be capable of push-button, DRC-clean RTL-to-GDS layout generation in a commercial FinFET process node. The tool is currently visible here. In its v1.0 form, it will be integrated on an incremental substrate provided by the OpenDB database and the OpenSTA static timing engine. It will also offer users and

Figure 4: OpenROAD v1.0 [4]

V1.0 Roadmap

How to deal with these expectations:

https://eri-summit.darpa.mil/docs/ERIsummit2019/posh/08IDEA%20UCSD%20Website.pdf

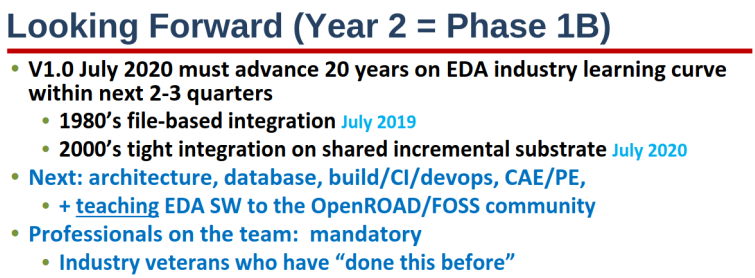


Figure 5: Looking forward [5]

[5] Source: Screenshot of the webpage.

Courses for OpenROAD

A single excellent project (some of us might know):

https://theopenroadproject.org/Courses/

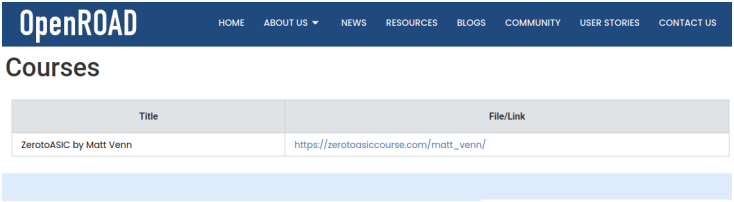


Figure 6: Courses [6]

[6] Source: Screenshot of the webpage.

Help is on the way

Kudos to this course:

https://theopenroadproject.org/news/6455/

Figure 7: This course [7]

[7] Source: Screenshot of the webpage.

Section 2

OpenROAD Flow Scripts

Flow steps

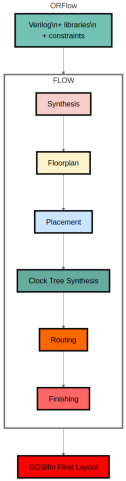


Figure 8: OpenROAD flow steps [8]

Flow components

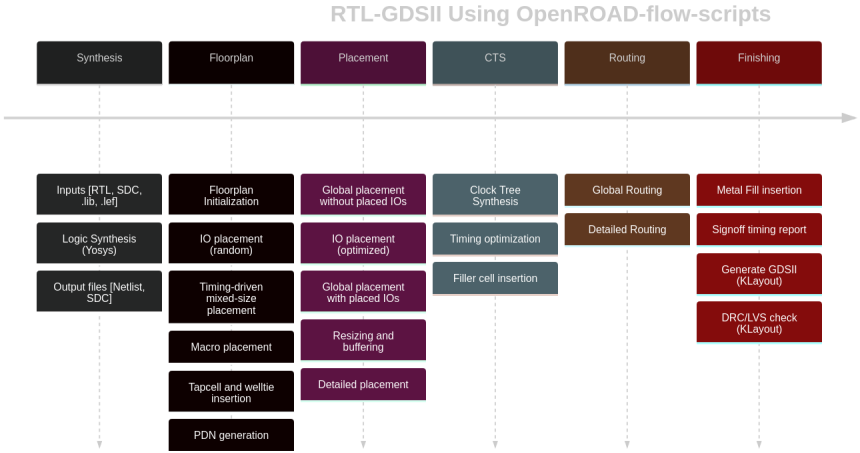


Figure 9: OpenROAD flow components [9]

Help with the terminology

Searching the terms with a standard search engine might not bring usefull results. Matt Venn created a page for EDA terminology:

https://www.zerotoasiccourse.com/terminology/