



FOSDEM 2020 Presentation

KiCad: Back to the Future

The Role of KiCad in the Open Hardware Movement

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In the Beginning...

- Before the advent of the personal computer all software was run on mainframes. Software development decidedly not open.
- Software copyrights recognized in the U.S. in 1964.
- The first personal computers available in the early to mid 1970s.
- Personal computers widely available by the end of the 1970s.
- Early personal computer software developers openly shared source code.
- The sharing didn't last very long.

The Dark Ages...

- The personal computer adoption ramps up quickly in the late 1970s.
- Restrictive proprietary commercial licensing became the norm.
- Software quality was spotty at best.
- Bugs persisted for long periods of time.
- Working code was purposely broken for competitive advantage.
- Users were an afterthought.
- User frustration of the state of proprietary software quickly grew.

A New Hope...

- Permissive BSD and MIT open source licenses created in the early and mid 1980s.
- Education institutions drive early open source development.
- Permissively licensed projects unceremoniously hijacked.
- Version 1 of the GPL appears at the end of the 80s.
- The GNU project lays the foundation with FLOSS development tools.
- Wide spread availability of internet service allows for development collaboration.

The Tide Changes...

- In 1991 some guy from Finland creates a kernel under the GPL2.
- Development tools and OS software quickly grow in the early 90s.
- Packaged GNU/Linux operating systems are everywhere.
- Commercial support of open source software becomes available in the early to mid 90s.
- Access to high speed internet effectively drives the cost of software distribution to zero.
- In the mid and late 2000s smart phones and small form factor devices push FLOSS into mainstream.
- FLOSS becomes ubiquitous.
- FLOSS hardware design tool development ramps up in the 2010s.

Open Hardware Takes Flight...

- Software licenses less than ideal for hardware.
- CERN releases the Open Hardware License in 2011.
- How open is a design created with proprietary software?
- CERN begins contributing to the KiCad project in 2011.
- Open source hardware design tools capability increases.
- Enough interest in open source hardware design software to justify a FOSDEM developer's room in 2015.
- Open hardware designs begin to appear.
- Board vendors directly support KiCad files for manufacture!
- RISC-V development begins in 2010 at UC Berkeley.

Now and into The Future...

- Rapid commercial adoption of RISC-V designs in the last few years.
- Open processor design is only the beginning, more open silicon needed.
- Die level development tools need to be opened.
- The holy grail, die fabrication processes.
- Will the entire stack ever be fully open?
- Will cost determine the growth rate of open hardware?

Year in Review

- Version 5.1 released in March.
- Project leader hired to work full time on KiCad in March.
- First ever KiCad conference (KiCon) in Chicago in April.
- [KiCad Services Corporation](#) offers paid support for KiCad.
- Project leader laid off in October.
- KiCad joins the [Linux Foundation](#) in November.
- Project leader joins KiCad Services Corporation in December.
- Code hosting moved to [GitLab](#).
- First ever KiCad new developer meeting on Friday.

The End

Thanks to all of the developers who contribute their valuable time and talent to the KiCad project.

Thank you to everyone who has donated to KiCad.

Thank you for your interest and continued support of the KiCad project.

Special thanks to Seth Hillbrand for organizing this developer room.