



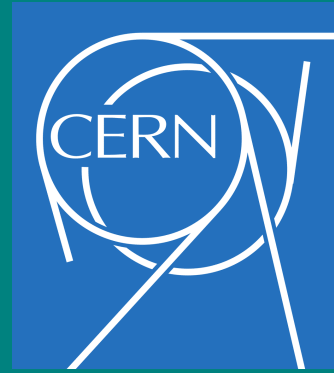
CERN Open Hardware Licence 2.0

Andrew Katz

www.moorcrofts.com



A suite of licences designed for Open Hardware

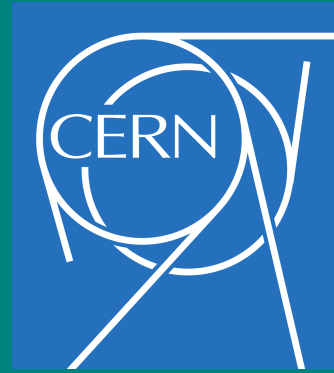


History

- **March 2011: CERN OHL 1.0**
- **July 2011: CERN OHL 1.1**
- **September 2013: CERN OHL 1.2**
- **2017: CERN OHL 2, beta 1**
- **2019 : CERN OHL 2, beta 2**

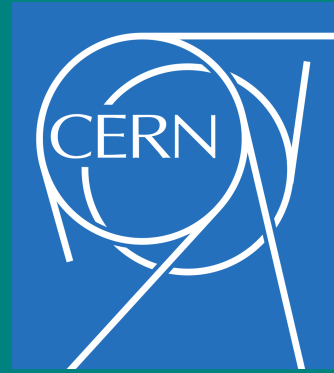


Copyright for hardware
Broad range: mechanical to electronic
Create a hardware commons
Easy to understand



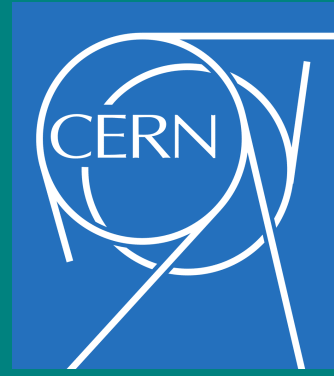
Specific Challenges

- Scope of copyleft
- Compatibility with other licences
- Fewer mature free and open-source toolchains for hardware than software (and particular problems with ASICs).
- Practicalities of working with FPGAs and ASICs



Other issues addressed

- Eliminate gendered Language
- Simpler terminology
- Borrowing terms (e.g. “Convey”)
- Troll dissuasion (compliance first approach)
- Contract, not a bare licence.
- Strong, weak and permissive.
- Now works for software



SCOPE



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**If you Make a Product from Covered Source,
you must make the Complete Source
available to a recipient of the Product, either
privately, or via a Source Location and
license it under the CERN OHL.**



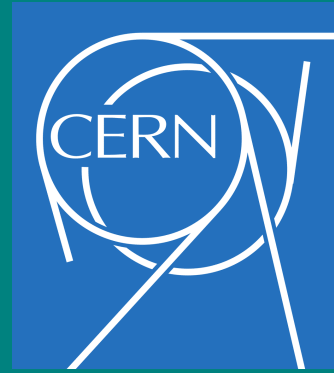
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...includes design materials, code, interfacing information etc. It does *NOT* include “Available Components” (for which you only have to provide specifications and interface information).



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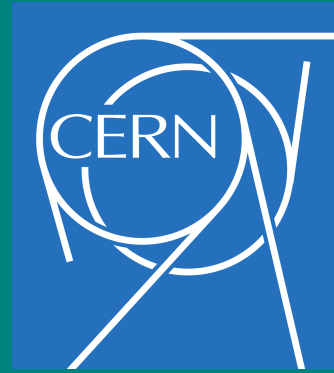


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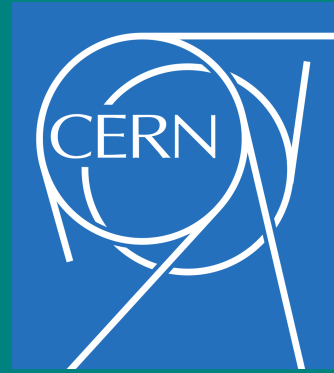
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- Datacentre
- Rack - network, power cabling
- Enclosure/PSU
- **Circuit board**
- Component - resistor, capacitor, FPGA
- Bitstream
- Custom code, standard libraries, third party libraries



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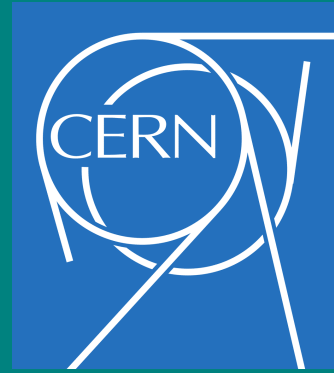
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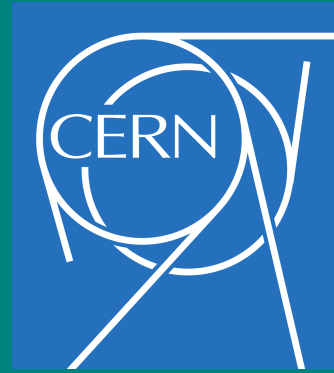


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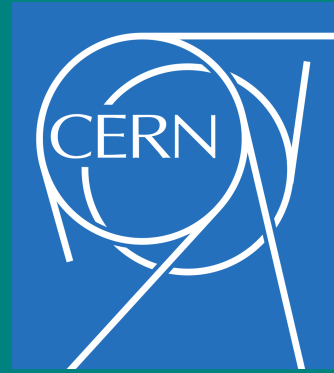
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- Available with the specifications, characteristics and interface information necessary to Make the Product
- Or is part of the normal distribution of the toolchain



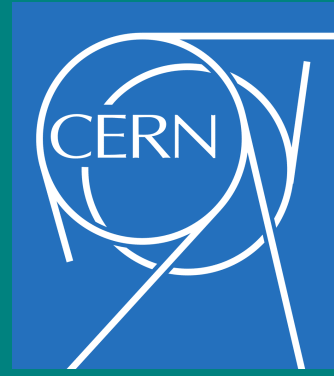
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“Product”

- May be a finished product, but may be
 - A Component, or
 - An intermediate form derived from the Complete Source, such as:
 - A bitstream
 - An object (.o) file



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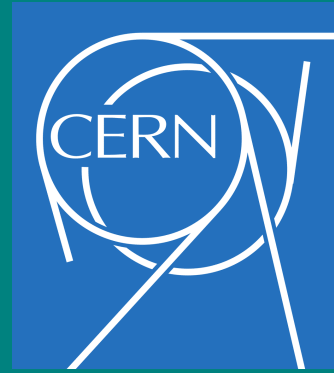
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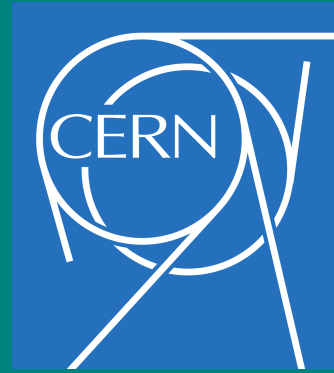
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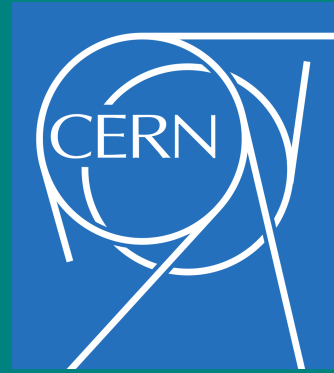
Scope of copyleft:

- Constrained upwards by “Product”
- Constrained downwards by “Available Component”



Difference between strong and weak

- **Weak:** You can release a Product without releasing the code for all its components if you have all of the interfacing information etc. for those components (like LGPL)
- **Strong:** the exception above *only* applies to physical components (i.e you have to release the complete code for digital code: software, HDL files, etc).
- **Why physical only?**
 - Physical components will generally have to be bought
 - Won't have the design files to make those components from atoms



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Permissive version

- Simpler than reciprocal versions, but with the same patent provisions.
- Like Apache: Notices must be preserved on transfer of the source.



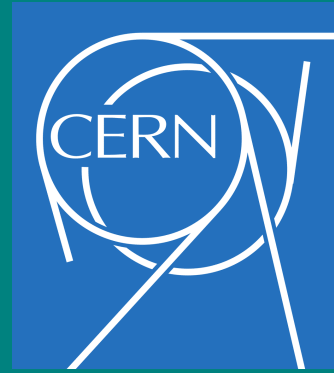
Where to next?

- Licences, FAQ and commentary available on <https://www.ohwr.org/projects/cernohl/wiki/cern-ohl-v2-draft>
- We have been consulting with FOSSi Foundation, SPDX and others
- If you would like to comment, please contact me at andrew.katz@moorcrofts.com
- Any Questions?



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